NM1 - 3

GENERAL CORRESPONDENCE

YEAR(S):

9/1992 → 1982

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

September 23, 1992

CERTIFIED MAIL
RETURN RECEIPT NO. P-670-683-668

Mr. Richard Brakey
Parabo, Inc.
P.O. Box 1737
Eunice, New Mexico 88231

RE: **Modification of OCD 711 Permit**
Parabo Disposal Facility
Lea County, New Mexico

Dear Mr. Brakey:

The Oil Conservation Division (OCD) has received your correspondence, dated September 4, 1992, informing the OCD as to your proposed research project. The project will involve the application of centrifuge technology to separate brines and solids from tank bottoms to yield a salable oil as described in the research project description submitted with the above correspondence.

Based on the information supplied in your proposal, the request for operation of the centrifuge research project is hereby approved.

This operation is a minor modification to your OCD Rule 711 permit and does not require public notice.

Please be advised approval of this modification does not relieve you of liability should your operation result in actual pollution of surface or ground waters or the environment actionable under other laws and/or regulations.

Please be advised that all tanks exceeding 16 feet in diameter and exposed pits, ponds or lagoons must be screened, netted or otherwise rendered nonhazardous to migratory birds.

If you have any questions, please contact Kathy Brown at (505) 827-5884.

Sincerely,

William J. LeMay
Director

WJL/kmb

xc: Chris Eustice, OCD Hobbs Office

PARABO, INC.
P. O. Box 1737
EUNICE, NEW MEXICO 88231

September 4, 1992

New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

ATTN: Ms. Kathy Brown

RE: Centrifuge Processing of Oil Field Tank Bottoms

Dear Ms. Brown:

Enclosed is a copy of the research project description you requested. If no modification to the current permits is required, I would appreciate a short memo stating that fact to be included in the project files.

Current proposed set-up timing is around September 11, 1992, at Parabo. Thank You.

Yours truly,

PARABO, INC.

Richard Brakey

RB/mh

Encl:

CENTRIFUGE TECHNOLOGY FOR MINIMIZING PETROLEUM PRODUCTION TANK BOTTOMS

In domestic petroleum production operations, approximately 2.5 X 10^6 bbl (1 bbl = 42 gal) of production tank bottoms are generated as associated waste annually. Tank bottoms contain solids and brines suspended or emulsified in oil, making that oil unsuitable for refining. Disposal of tank bottoms represents a major operating problem for the domestic and international oil and gas industry. A large portion of the volumes of tank bottoms generated end up in earthen disposal pits. Such practices not only concentrate potentially noxious wastes, but also do not address waste minimization goals. In addition, many states are considering or have adopted regulations which will limit future land disposal of this type of waste.

One technology which has recently been successfully (technically and very economically) implemented for minimizing these volumes is the application of centrifuge technology to separate the relatively small volumes of brines and solids from the tank bottoms, yielding a salable oil. However, these methods are not widely practiced by major operators, who have considerable technical support and resources, and are largely unknown by small operators, who often have limited resources and technical support. In addition, the nature of the separation and the volume of waste varies widely form site to site. Thus, the work of this proposal would assess the efficacy of a specially developed centrifuge in processing different types of tank bottoms and develop the economics of scale required for such operations. The results would provide a demonstration of the efficacy of the technology for all operators.

Existing Centrifuge Technology

Because production tank bottoms consist of suspensions and emulsions of produced solids, brines and crude oils, it is desirable to separate three phases. Continuous, three phase centrifuges are notoriously difficult to operate, especially when the nature of the feed changes. One equipment developer, Neil Miller of Centech in Mills, Wy., has been recommended as being successful in developing a skid mounted, continuous, three phase centrifuge for separating salable oil from tank bottoms. Presently. Mr Miller provides separation services to petroleum operators in Wyoming. No such separation service is available in New Mexico. Normally, Mr Miller charges a daily charge of $750 per day to cover his expenses and a volume charge to generate a profit. For this project, Mr. Miller will provide the service for travel expenses and the $750 daily charge but no volume processing charge.

In addition, Mr. Miller is at a decision point in his business plans. He has developed several prototypes of centrifuges and would like to develop an additional prototype. He must also decide whether he should be in the centrifuge manufacturing business or whether he should be in the separation service business.

Production Tank Bottoms Disposal in S.E. New Mexico

Unichem, with an office located in Hobbs NM, operates a large earthen disposal pit which serves the oil producers in the area for disposing of tank bottoms. After transportation to the pits but prior to disposal, the tank bottoms are treated thermally, and chemically if necessary, and separated by gravity into salable crude oil, water and solids. Approximately 90% of the tank bottoms is recovered as salable oil. As good as this recovery sounds, the resulting solids contain relatively high oil content and the operator is looking for methods to improve on the separation as environmental restrictions are becoming increasingly stringent. In particular,

Unichem would like to see a separation in which the oil contains less than .5% BS&W, the solids contain less than 3% oil and the water contains less than 500 ppm oil. For this project, Unichem will provide vacuum trucks and operators, tank bottoms, tanks, heaters, pumps and, chemicals where necessary, at their expense.

Statement of the Work

In this project, the Centech centrifuge will be transported from Wyoming to the Unichem disposal pit site in S.E. New Mexico and four to eight types of tank bottoms, selected by Unichem, will be centrifuged. The exact schedule will determined after the project is approved but hopefully the tests can be accomplished this ('92) summer. It is expected that two or three days will be required for adjusting the centrifuge for each oil type and an estimated twenty one day period will be scheduled for the tests. For each type of bottoms, success will be operation over sufficient period of time with a target of less than .5% BSW in the separated oil stream, less than 3% oil in the solid stream, and less than 500 ppm oil in the water stream.

For each type of tank bottom, data for an economic evaluation will be obtained. Specifically, rates of separation, heat and power consumption, chemical addition rates and labor requirements will be recorded. The operating data, costs of utilities and capital will be used in an economic evaluation of the process. An objective is to publish a masters thesis and a technical journal article on the results of this project. The technical journal article will be submitted within one year of approval of the project.

Organization

The Principle Investigators for this project will be Drs. Robert E. Bretz and Robert Lee, both with the Petroleum Engineering Department of New Mexico Tech, and Jerry Parkinson of Los Alamos National Laboratories. Dr. Bretz (resume attached) will serve as the administrator

for the project and will be responsible for reports and the budget. Drs. Lee and Parkinson (resumes attached) provide technical direction and advice. In particular, use will be made of the ASPEN process simulation code under the direction of Dr. Parkinson at LANL. Mr. Boyun Guo (resume attached), presently a PhD candidate at NM Tech and who is expected to graduate soon, will be the field representative for the project. Mr. Guo 's function will be to observe the tests and record and assist with the analysis of the data obtained. In addition, a graduate student will be recruited to perform the detailed analysis for the project. In the event that a suitable graduate student cannot be recruited, Mr Guo may be retained to complete the analysis and the journal article.

Unichem of Hobbs, NM will provide at no cost to the project, vacuum trucks, suitable tank bottoms, pumps, tanks, heaters, chemicals and supervisory and operating personnel. Centech of Mills WY will provide the centrifuge and supervisory and operating personnel at $750 per day to cover expenses. Samples will be analyzed by the Hobbs Oil Water Experimental (HOWE) facility, a part of the Waste-management Education and Research Consortium (WERC) a DOE sponsored pilot project.

Budget Summary

The total funding requested from RIOTECH is $69,713 for the one year project. In addition, another approximately $40,860 in salaries, wages and chemical analytical services will be borne by others. Besides the use of the centrifuge at cost, other equipment and software available to the project at no cost is estimated in value at $79,000.

BUDGET

	NM Tech	Off Campus	Cost Share
I. Salaries			
1. Principal Investigators			
Bretz/Lee, NM Tech			
@ 1/9 Academic Year	$ 5,000.00		
Parkinson, LANL			
@ 8% Annual (Burdened)			$20,000.00
2. Post Doctoral Associate			
Guo Boyun @ 1/4 Year	$ 7,500.00		
3. Graduate Assistant	$10,000.00		
II. Fringe Benefits			
1. 22% of I.1	$ 1,100.00		
2. 32% of I.2	$ 2,400.00		
3. 1.5% of I.3	$ 150.00		
4. Tuition Waiver	$ 1,500.00		
III. Travel			
1. NM Tech	$ 2,100.00		
2. Centech		$ 1,800.00	
IV. Laboratory Services			
HOWE/WERC 200 Samples @ $30			$ 6,000.00
V. Centrifuge Expenses			
21 days @ $750/day		$15,000.00	
VI. Disposal Pit Facilities Expense			
42 man days @ $30			$ 3,360.00
Supervision			$ 1,500.00
Fuel, utilities, maintenance and			
use of estimated $75,000 of eqpt.			$ 5,000.00
VII. Use of LANL Software			
Value			Cost
TOTAL DIRECT COSTS	$29,750.00	$16,800.00	$35,860.00
VIII. Indirect Costs			
57% of NM Tech	$16,957.50		
TOTAL DIRECT & INDIRECT COSTS	$46,707.50	$16,800.00	$35,860.00
TOTAL FUNDING REQUESTED FROM RIOTECH		$63,507.50	
NM Tech + Off Campus			
TOTAL FOR PROJECT - NM TECH + OFF CAMPUS + COST SHARE			$99,367.50

ROWLAND TRUCKING COMPANY

A DIVISION OF
EUNICE RENTAL TOOL COMPANY

PHONE
(505) 397-4994

418 SOUTH GRIMES
HOBBS, NEW MEXICO 88240

PHONE
(505) 393-9023

August 17, 1992

Mr. Chris Eustice
New Mexico Oil Conservation Division
P. O. Box 1980
Hobbs, New Mexico 88241-1980

Re: Conformation of telephone conversation with Pete Turner

Dear Mr. Eustice:

We are awaiting your approval to haul our washbay-sand trap sediments into Parabo's disposal facility. I want to confirm the following:

1) Our washbay operating procedures have not changed since our last disposal haul of such dirt.

2) The removed dirt is now in temporary storage pits (plastic lined and covered) within the yard.

3) There is no use of solvents during truck washing operations.

We feel that the last tests run on the sumps are characteristic to the ones on hand now. Enclosed are copies run by the independent laboratories showing no hazardous characteristics present.

Rowland Trucking will wait on your authorization to transfer this dirt.

Your attention is appreciated.

Sincerely,

ROWLAND TRUCKING COMPANY

Richard Brakey
Vice President

RB/dm

Verbal approval to Chris a Rowland by Pete Turner (Debra) 8/21/92 RB

Lubbock Christian University Institute of Water Research
5601 West 19th Street • Lubbock, Texas 79407 • (806) 796-8900

ANALYTICAL RESULTS FOR
UNICHEM INTERNATIONAL, INC.
Attention: Norman D. Denton
P. O. Box 1499
Hobbs, NM 88240

May 21, 1991
Receiving Date: 5/06/91
Sample Type: Rowland Sump
Project No: Rowland - 91-1
Project Location: Hobbs

Sampling Date: 4/04/91
Sample Condition: Intact & Cool
Sample Received by: YL
Project Name: Wash Out Sumps

TCLP SEMI-VOLATILES (ppm)	EPA Limit	Y23254 #1 Rowland Sump	Y23254 Corrected	Detection Limit	QC	%P	%EA	%IA
Chlordane	0.03	<0.005	<0.005	0.005	10.0	100	NR	100
m-Cresol	200.0	<0.01	<0.01	0.01	0.2	100	95	94
o-Cresol	200.0	<0.01	<0.01	0.01	0.2	100	NR	90
p-Cresol	200.0	<0.01	<0.01	0.01	0.2	100	95	94
Total Cresol	200.0	<0.01	<0.01	0.01	0.06	100	NR	93
1,4-Dichlorobenzene	7.5	<0.01	<0.02	0.01	0.1	100	65	100
2,4-Dinitrotoluene	0.13	<0.01	<0.01	0.01	0.1	100	99	116
Heptachlor (and its hydroxide)	0.008	<0.0005	<0.0005	0.0005	20.0	100	NR	95
Hexachloro-1,3-butadiene	0.5	<0.005	<0.005	0.005	0.2	100	91	100
Hexachlorobenzene	0.13	0.055	0.055	0.001	0.1	100	108	88
Hexachloroethane	3.0	<0.01	<0.01	0.01	0.1	100	89	84
Nitrobenzene	2.0	<0.05	<0.05	0.05	0.1	100	87	109
Pyridine	5.0	<0.1	<0.1	0.1	0.1	100	NR	116
Pentachlorophenol	100.0	<0.1	<0.1	0.1	0.4	100	NR	85
2,4,5-Trichlorophenol	400.0	0.24	0.24	0.01	0.1	100	75	94
2,4,6-Trichlorophenol	2.0	0.08	0.08	0.05	0.1	100	100	106
Endrin	0.02	<0.005	<0.005	0.005	20.0	100	NR	99
Lindane	0.4	<0.05	<0.05	0.05	20.0	100	NR	100
Methoxychlor	10.0	<1.0	<1.0	1.0	20.0	100	NR	100
2,4-D	10.0	<0.01	<0.01	0.01	2.0	100	NR	100
2,4,5-T-P (Silvex)	1.0	<0.02	<0.02	0.02	2.0	100	NR	100
Toxaphene	0.5	<0.1	<0.1	0.1	2.0	100	NR	100

METHODS: EPA SW 846-8270, 1311.

Director, Dr. Blair Leftwich

Asst. Dir., Dr. Bruce McDonell

5-21-91
Date

UNICHEM INTERNATIONAL INC.
ENVIRONMENTAL INVESTIGATIONS

CHAIN OF CUSTODY RECORD

Laboratory: JORDAN LABS - CORPUS CHRISTI TEXAS

Project No. ROW-1-11-90 #143 Project Name ROWLAND TRUCKING DIRT SAMPLES

SAMPLERS: (Signature) WAYNE PRICE - Wayne Price
NORMAN DENTON - Norman Denton

Site Number	Date	Time			Sample Identification	Site Description	RCRA - CHARACTERISTICS - TCLP	IGN, PH, REACT	TCLP - METALS	TCLP - BENZENE	BETX	TPH	CYANIDE - TOTAL	TOTAL METALS	TOX	REMARKS
#1	11/26/90	10:21AM			1QL - COMPOSITE DIRT - (#1)	ROWLAND - EUNICE DIRT PILE - DIESEL SPILL CLEAN-UP		X	X	X	X	X	X	X	X	
#2	11/26/90	9:48AM			1QL COMPOSITE DIRT (#2)	EUNICE ROWLAND SUMP - DIRT PATH WASH BAY SUMP		X	X	X	X	X	X	X	X	
#3	11/26/90	11:10AM			1QL COMPOSITE DIRT (#3)	HOBBS - ROWLAND PATH - SUMP		X	X	X	X	X	X	X	X	
#4	11/26/90	10:59AM			1QL COMPOSITE DIRT & RUBBER HOSE	ROWLAND - EUNICE OLD RUBBER HOSE		X	X	X	X	X	X	X	X	

Relinquished by: (Sign.)	Date	Time	Received by: (Sign.)
WAYNE PRICE Wayne Price	11/26/90	1:00PM	NORMAN DENTON Norman Denton
Relinquished by: (Sign.)	Date	Time	Received by: (Sign.)
Relinquished by: (Sign.)	Date	Time	Received for Laboratory by: (Sign.) 11/29/90 1350

REMARKS:
- COOLED TO 4°C
SAMPLES TAKEN PER SW-846 -
COMPOSITE REPORTS & PICTURES ON FILE WITH NORMAN DENTON

PLEASE RETURN COOLER & ICE PACKS

JORDAN LABORATORIES, INC.
CHEMISTS AND ENGINEERS
CORPUS CHRISTI, TEXAS
DECEMBER 31, 1990

UNICHEM INTERNATIONAL
P.O. BOX 1499
HOBBS, NEW MEXICO 88240

REPORT OF ANALYSIS
TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)
GC METHOD 8020

LAB. NO.	SAMPLE IDENTIFICATION	BENZENE MG/L
M28-10007	SAMPLE #1 ROLAND EUNICE DIRT PILE DIESEL SPILL CLEANUP 11-26-90 TCLP EXTRACT	ND
M28-10008	SAMPLE #2 ROWLAND SUMP WASH BAY SUMP DIRT 11-26-90 TCLP EXTRACT	ND
M28-10009	SAMPLE #3 HOBBS-ROWLAND PTOW-SUMP 11-26-90 TCLP EXTRACT	ND
M28-10010	SAMPLE #4 EUNICE OLD RUBBER HOSE 11-26-90 TCLP EXTRACT	ND

ND=NOT DETECTED <0.01 MG/L

NOTE: REGULATORY LEVEL FOR BENZENE IN A TCLP EXTRACT IS 0.5 MG/L

RESPECTFULLY SUBMITTED,

CARL F. CROWNOVER

EL. 512-884-0371 PO BOX 2552 78403

JORDAN LABORATORIES, INC.
CHEMISTS AND ENGINEERS
CORPUS CHRISTI, TEXAS
DECEMBER 31, 1990

UNICHEM INTERNATIONAL
P.O. BOX 1499
HOBBS, NEW MEXICO 88240

REPORT OF ANALYSIS

IDENTIFICATION: SAMPLE #3
HOBBS ROWLAND POTW-SUMP
11:10 AM 11-26-90

GC METHOD 8020

LOQ MG/KG		AMOUNT MG/KG
1	BENZENE	ND
1	ETHYL BENZENE	ND
1	TOLUENE	ND
1	XYLENES, TOTAL	5.6

GC METHOD 8100

LOQ MG/KG		AMOUNT MG/KG
10	CUMENE	ND
10	NAPHTHALENE	52
10	TRIMETHYL BENZENES, TOTAL	33

LOQ=LIMIT OF QUANTITATION
ND=NOT DETECTED, <LOQ

RESULTS ON DRY WEIGHT BASIS. PERCENT MOISTURE = 25.0

LAB. NO. M28-10009

RESPECTFULLY SUBMITTED,

CARL F. CROWNOVER

JORDAN LABORATORIES, INC.
CHEMISTS AND ENGINEERS
CORPUS CHRISTI, TEXAS
JANUARY 11, 1991

UNICHEM INTERNATIONAL
P.O. BOX 1499
HOBBS, NEW MEXICO 88240

REPORT OF ANALYSIS

IDENTIFICATION: SAMPLE #3
HOBBS-ROWLAND POTW-SUMP
11:10 AM 11-26-90

		ANALYSIS DATE
PH	6.91	12-04-90
TOTAL PETROLEUM HYDROCARBONS, PPM	101000	12-06-90
TOTAL ORGANIC HALIDES, PPM	14	12-04-90
CYANIDE, PPM	1.5	12-12-90
TOTAL AVAILABLE SULFIDE, PPM	<10	12-06-90
IGNITABILITY	SEE NOTE	

RESULTS ON TCLP - EXTRACT

	MG/L	
ARSENIC	0.008	12-20-90
BARIUM	1.1	12-11-90
CADMIUM	<0.01	12-15-90
CHROMIUM	<0.01	12-15-90
LEAD	<0.1	12-15-90
MERCURY	<0.001	12-07-90
SELENIUM	<0.01	12-20-90
SILVER	<0.01	12-15-90

NOTE: MATERIAL IS A SOLID THAT DOES BURN WHEN EXPOSED TO AN OPEN FLAME BUT DOES NOT EXHIBIT THE CHARACTERISTIC OF IGNITABILITY AS DESCRIBED IN SW-846, SEC.C., 7.1.

LAB. NO. M28-10009

RESPECTFULLY SUBMITTED,

CARL F. CROWNOVER

UNICHEM
INTERNATIONAL

Home Office 707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, Fax 505/393-6754

March 26, 1992

Ms. Kathy Brown
NMOCD
P.O. Box 2088
State Land Office Bldg.
Santa Fe, NM 87504

Dear Kathy:

Conversion of Pit No. 7, Parabo Disposal Facility
Lea County, New Mexico, OCD Letter 03/09/92

I am sending this letter to confirm our telephone conversation this afternoon regarding the OCD's letter dated March 9, 1992.

We were confused by the wording in Condition #3 stating:

> *"Only solids that are non-hazardous by RCRA Subtitle C or by characteristic testing will be accepted at the facility".*

During our telephone conversation, you clarified this sentence by stating that the intent of Condition #3 is that we can only accept oil and gas exploration and production exempt wastes at this particular pit. Non-exempt wastes must be handled on a case-by-case basis.

Thank you for your assistance.

Sincerely,

UNICHEM INTERNATIONAL INC.

Charles N. Root
Regulatory Affairs Manager

CNR:jd
pc: R. Brakey
W. Price

Chris Eustice,
NMOCD
1000 W. Broadway
Hobbs, NM 88240

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

March 9, 1992

CERTIFIED MAIL
RETURN RECEIPT NO. P-670-683-491

Mr. Norman D. Denton
Parabo, Incorporated
P.O. Box 1737
Eunice, New Mexico 88231

RE: **Conversion of Pit No. 7**
Parabo Disposal Facility
Lea County, New Mexico

Dear Mr. Denton:

The Oil Conservation Division (OCD) has received your request, dated February 17, 1992, to convert Pit No. 7 from salt water disposal to a segmented "solids" pit.

Based on the information supplied in your request, the request for conversion of Pit No. 7 is hereby approved with the following conditions:

1. The maximum elevation of solids in the pit will be maintained at a level of one foot below the lowest most top of the Red Beds.

2. The surface area around the pit will remain clean and free of oil.

exempt by RCRA Subtitle C

3. Solids to be disposed of in the pit are limited to contaminated dirt, drilling mud (spent), and cement. Only solids that are non-hazardous by RCRA Subtitle C or by characteristic testing will be accepted at the facility. Solids from operations not currently exempt under RCRA Subtitle C or mixed exempt/non-exempt solids will be tested for appropriate hazardous constituents and accepted on a case-by-case basis. Test results must be submitted to the OCD along with a request to receive the non-exempt solids, and a written OCD approval must be obtained prior to disposal.

The OCD has also received your request, dated February 17, 1992, to install a central unloading station consisting of one frac tank cut in half for unloading (screened), one trailer for storage of equipment, and one complete frac tank for water storage. Based on the information supplied in your request, the OCD approves of the installation of the unloading station. The OCD requires that one side of the frac tank which is cut in half be kept open to the base of the tank so that the tank may be inspected visually for leaks.

If you have any questions, please contact Kathy Brown at (505) 827-5884.

Sincerely,

William J. LeMay
Director

WJL/KMB

xc: Chris Eustice, OCD Hobbs Office

PARABO, INC.

P. O. Box 1737
EUNICE, NEW MEXICO 88231

February 17, 1992

Ms. Kathy Brown
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Dear Ms. Brown

Equipment Addition - Parabo

This letter is to receive approval of equipment addition which may fall under O.C.D. approval requirements.

Parabo is in the process of installing an unloading area for frac tanks. The area is located on the northwest side of B.S. Pit 7 North. Equipment consists of one frac tank which has been cut in half, (screened with expanded metal and framed), and one 8' x 40' trailer (for storage and placement of safety equipment), and one complete frac tank for water storage (flushing water).

The purpose of this unloading station is for central unloading and safety purposes. The unloading pit will be kept emptied by parabo employees, placing materials in proper pits, (e.g. produced water into water pits, B.S. into B.S. pits, etc.). This will help guarantee more professional and safer working area around the actual pits.

Enclosed is a map showing the approximate location of the water storage, equipment storage, and catch pit.

The entire area in which the equipment is being placed is contained within the Parabo facility and within the monitor well and redbed area.

Your consideration in this matter is greatly appreciated. If I can be of any assistance to your feel fell to contact me.

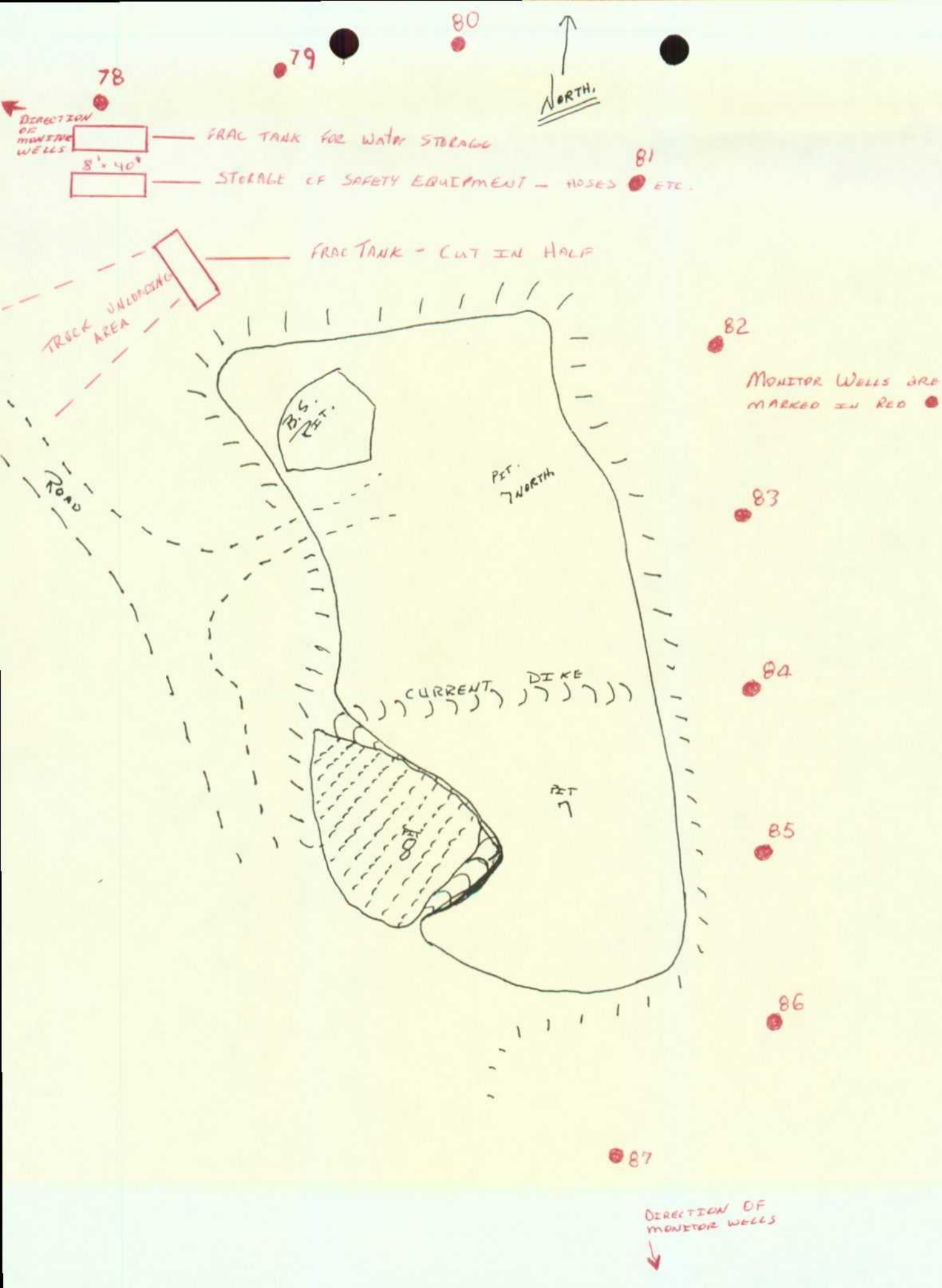
Sincerely,

PARABO, Inc.

Norman D Denton

Norman D. Denton
Safety & Environmental Coordinator

NDD:jd


80
79
78
NORTH.
DIRECTION OF MONITOR WELLS
FRAC TANK FOR WATER STORAGE
8' x 40'
STORAGE OF SAFETY EQUIPMENT — HOSES ETC.
81
FRAC TANK - CUT IN HALF
TRUCK UNLOADING AREA
82
MONITOR WELLS ARE MARKED IN RED
ROAD
PIT 7 NORTH
83
CURRENT
DIKE
84
PIT 7
PIT 8
85
86
87
DIRECTION OF MONITOR WELLS

PARABO, INC.
P. O. Box 1737
EUNICE, NEW MEXICO 88231

February 17, 1992

Ms. Kathy Brown
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Dear Ms. Brown:

Amendment to Rule 711 - "Parabo"

This letter is to request an amendment to "Rule 711", concerning "Pit 7" in our "Parabo" facility. Pit 7 is currently utilized as a salt water disposal pit, which is within the monitor wells and is lined with redbed.

We are requesting a change from salt water disposal, to a "solids" pit, allowing oil contaminated dirt, drilling mud (spent), and cement to be placed into the pit.

Pit 7 is isolated from other pits by redbed dikes, and currently maintained levels will be kept. Water currently in pit 7 will be transferred to pit 6, (also salt water disposal pit). Pit 7 will be "dried out" prior to placement of any solids into pit.

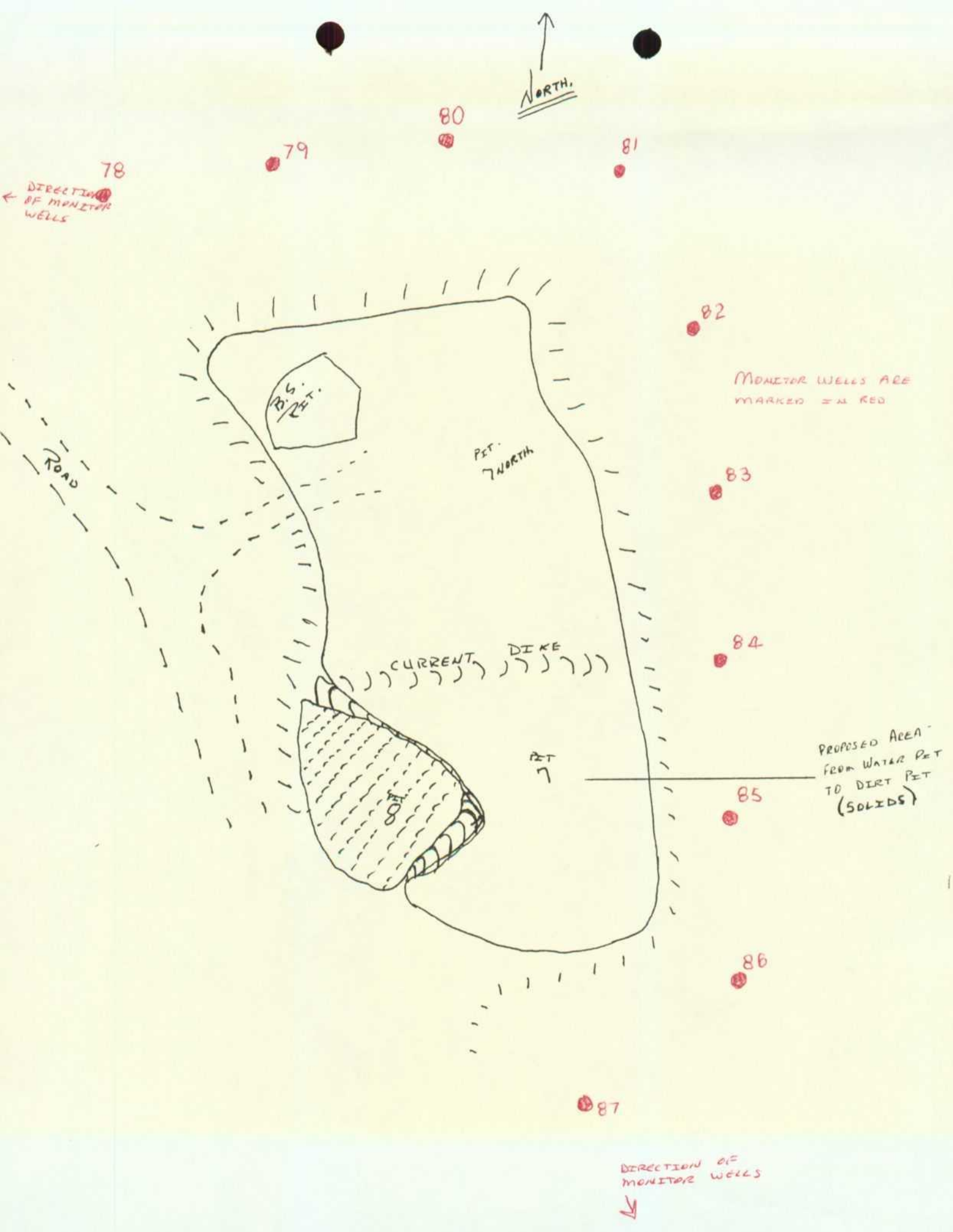
Your consideration in this mater is greatly appreciated. As usual if I can be of any assistance, fell free to contact me.

Sincerely,

PARABO, Inc.

Norman D. Denton
Safety & Environmental Coordinator

NDD:jd
cc: R. Brakey
Unichem Env. Report


NORTH.
80
79
81
78
DIRECTION OF MONITOR WELLS
82
MONITOR WELLS ARE MARKED IN RED
BIG PIT.
PIT 7 NORTH
ROAD
83
CURRENT DIKE
84
PROPOSED AREA FROM WATER PIT TO DIRT PIT (SOLIDS)
PIT 7
PIT 8
85
86
87
DIRECTION OF MONITOR WELLS

UNICHEM
INTERNATIONAL

Home Office 707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, Fax 505/393-6754

November 7, 1991

Mr. Roger Anderson
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504

Dear Roger,

Per our telephone conversation on October 9, 1991 and November 7, 1991, we understand we have permission to dispose of certain dirt that was removed from our Rowland Trucking Company facility Wash Bay Sumps in Hobbs and Eunice. We also understand that we have permission to dispose of some diesel contaminated dirt that was generated at our Eunice yard.

Per our telephone conversation and your resultant review of the analytical results, we understand we can dispose of this material at our Parabo Facility located East of Eunice, New Mexico.

Your office has on file the initial request along with all analytical results showing this material to be non-hazardous per Norman D. Denton's letter dated September 24, 1991.

We will also notify Mr. Jerry Sexton of the N.M.O.C.D. Hobbs office before we move the material.

Thank you very much for your cooperation and if you have any questions, please don't hesitate to call.

Wayne Price

L. W. Price
Staff Engineer

LWP:drm

cc: R. Brakey
N. Denton
C. Root

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

DAVID M. GARLICK
Director
JERRY W. MULLICAN
Director of Underground
Injection Control
(512) 463-6790

1701 N. CONGRESS | P. O. BOX 12967 | AUSTIN, TEXAS 78711-2967

August 5, 1991

G. D. Henry
Amoco Production Company
P. O. Box 3092
Houston, TX 77253

Re: Permit to Dispose of Certain Oil and Gas Waste at the Parabo, Inc. Disposal Facility Eunice, NM

Dear Mr. Henry:

This permit is your authority to dispose of certain oil and gas wastes generated in Texas at a facility not permitted by the Railroad Commission; namely, the Parabo, Inc. Disposal Facility in Eunice, New Mexico. This permit is granted based on information contained in your letter dated May 16, 1991 and subsequent information supplied to this office and is subject to the following conditions:

1) The wastes authorized by this permit for disposal at the referenced facility are limited to noninjectable water based drilling fluids and the associated cuttings, nonreclaimable oil based drilling fluid and the associated cuttings, drill cement, nonreclaimable tank bottoms, oil contaminated soil, and other noninjectable, nonreclaimable oily waste. This permit does not authorize disposal of any waste that can be disposed of by injection or any waste not authorized by the disposal facility's permit.

2) This permit is effective August 5, 1991 and expires October 31, 1991.

Please contact Leslie Savage at (512)463-6789 if you have any questions.

Sincerely yours,

Jerry Mullican, Director
Underground Injection Control

JWM/lls

cc: RRC - Midland
RRC - Lubbock
RRC - Pampa

David Boyer, Environmental Bureau Chief
New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504-2088

ROWLAND TRUCKING COMPANY

A DIVISION OF

UNICHEM INTERNATIONAL, INC.

PHONE
(505) 393-7751

P.O. BOX 1499
HOBBS, NEW MEXICO 88241

FAX
(505) 393-7751, Ext. 283

February 5, 1991

Dave Boyer
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

SUBJECT: ACCIDENTAL IGNITION OF PARABO - PIT #8

Dear Mr. Boyer,

On Thursday, January 31, 1991 we experienced an accidental fire on our "solids" pit #8, within our Parabo complex. Following is a sequential account of the incident.

At approximately 9:00 a.m. Stan Terry, a Parabo employee, was instructed by Montie Baxley, also a Parabo employee, to pick up several barrels around the Parabo complex and move them to the empty drum storage area. One of these barrels was located on the berm (dike) separating pits #7 and #8. When Stan picked up the barrel he noticed that there was a small amount of liquid still in the barrel. (The barrel had been used to store diesel fuel for a transfer pump located between pits #7 and #8. The pump had been experiencing problems with the carburetor system filling up with water. This problem was resolved through the installation of a new diesel tank on the pump. The barrel in question had not been utilized for approximately three months.)

Mr. Terry assumed that the small amount of liquid in the barrel was primarily water because of the problems experienced and decided to pour the contents onto the dike and into the pit area. While pouring, Mr. Terry noticed that the fluid coming from the barrel was not water but diesel. He then decided that the best way to clean up the diesel was to burn it. Upon ignition, the fire quickly spread to include pit #8 before he could do anything to stop the fire. The fire started at approximately 9:10 a.m.. Mr. Terry was forced to leave the dike for his own safety and fortunately was not injured.

Richard Brakey, Division Manager of Parabo, was present in the office at the facility at the time of the fire. He noticed the smoke and immediately went to investigate. Mr. Brakey made sure that Mr. Terry was safe and then instructed Don McLean, Parabo Manager, to call the Eunice Fire Department. The fire department responded with fire fighting equipment and an ambulance.

At approximately 9:30 a.m. I was notified by the Rowland Eunice Dispatcher of the fire at Parabo. I immediately contacted Wayne Price, Staff Engineer with Unichem International Inc.. Wayne and I proceeded to the scene. While in route to the scene, Jerry Sexton, with the New Mexico Oil Conservation Division (NMOCD) in Hobbs and the Unichem safety department were contacted by mobile phone and informed of the fire.

We arrived at the location at approximately 9:45 a.m. The entire pit was engulfed in fire with smoke rising 300 to 500 feet into the air. The smoke was dissipating by wind moving to the north northeast. The smoke was monitored as to direction and altitude by Unichem employees Pam Matlock, Administrative Assistant to the safety department and Wes Johnston, Construction Foreman.

Jerry Sexton of the NMOCD arrived and he and Mr. Price contacted the Santa Fe office of the NMOCD and spoke to you. You later informed Mr. Price that you had called Bill Blankenship of the New Mexico Environmental Improvement Division (NMEID). It was reported that because the fire was accidental and that there were no injuries or environmental damage, the NMEID would not further investigate. (The only material that escaped the pit were the products of combustion.)

This fire resulted in the immediate implementation of several safety procedures.

1. No smoking will be permitted anywhere on Parabo property, with the exception of the office. Appropriate signs will be displayed.

2. No open flames will be permitted without a hot work permit. Appropriate signs will be displayed immediately.

3. All Parabo employees will attend training on reporting spills.

4. All Parabo employees will attend training on proper response and clean-up of spills.

Mr. Terry was interviewed following the incident and it was determined that at no time was he instructed or ordered to pour contents from the diesel barrel into the pits or onto the ground nor was he instructed to burn the diesel. He stated that he was very surprised by the speed at which the fire progressed.

The fire burned itself out at approximately 12:30 p.m.. Afterwards, there were a few "hot spots" and the Eunice Fire Department proceeded to put them out. After the fire department left the scene a 24 hour fire watch was posted on Pit #8 to report a possible re-ignition.

If I can be of further assistance, don't hesitate to call.

Regards,

ROWLAND TRUCKING COMPANY

Norman Denton
Safety Coordinator

ND:pm

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

February 25, 1991

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-327-278-083

Mr. Richard Brakey
Parabo, Incorporated
P. O. Box 1737
Eunice, New Mexico 88231

RE: Conversion of Pit 7
Parabo Disposal Facility
Lea County, New Mexico

Dear Mr. Brakey:

The Oil Conservation Division (OCD) has received your request, dated January 28, 1991, to convert Pit No. 7 into a segmented BS & W pit.

Based on the information supplied in your request and the OCD site inspection, the request for conversion of Pit No. 7 is hereby approved with the following conditions:

1. The maximum elevation of BS & W in the pit is one foot below the lowest most top of the Red Beds in each segment.

2. The surface area around the segments will remain clean and free of oil.

If you have any questions, please contact Roger Anderson at (505) 827-5884.

Sincerely,

William J. LeMay
Director

WJL/RCA/sl

cc: OCD Aztec Office

DIVISION
PARABO, INC.
P. O. Box 1737
EUNICE, NEW MEXICO 88231

'91 JAN 31 AM 9 37

January 28, 1991

David G. Boyer
310 Old Santa Fe Trail, Room 205
Land Office Building
Santa Fe, New Mexico 87501

Dear Mr. Boyer:

Parabo is requesting administrative approval to convert the evaporation pit # 7 into a segmented B S & W pit. All of the produced water presently in pit # 7 is being pumped into pit # 2 and pit # 3. Once the water has been removed, dirt work would begin to segment pit # 7 into several smaller and deeper B S & W pits. These smaller B S & W pits would then be covered with adequate bird netting.

The B S & W arriving at Parabo by tank trucks would continue to be off-loaded into the present system of tanks at the main facility. As much liquid would be removed as possible at this time. The remaining sludge would be transported back to pit # 7 for storage.

Pit # 7 is presently permitted for produced water. The pit is very deep allowing for very slow evaporation of this water. The need for additional capacity for B S & W has increased steadily in the past six months straining Parabo's present B S & W capacity to the limit. This additional B S & W pit is very necessary to the on-going and future operations of Parabo.

Yours truly,

PARABO, INC.

Richard Brakey
Division Manager

RB/mh

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

September 19, 1990

CERTIFIED MAIL
RETURN RECEIPT NO. P-918-402-306

Parabo, Inc.
P. O. Box 1737
Eunice, New Mexico 88231

RE: Regulatory Notification, New Federal Requirements for Oil Reclamation Facilities

Dear Sir:

This letter is to advise you of a forthcoming federal requirement that may affect operation of your facility.

As you know, only the New Mexico Oil Conservation Division (OCD) currently regulates your facility. However, on September 25, 1990, a US Environmental Protection Agency (EPA) regulation directing use of the Toxicity Characteristic Leaching Procedure (TCLP) and adding toxicity constituent regulatory levels becomes effective. On that date waste material containing benzene, a natural component of crude oil, will be regulated as federal "hazardous waste" if benzene levels exceed the promulgated level of 500 parts per billion (ppb). Certain waste materials are excluded from this regulation including wastes from crude oil and natural gas exploration and production activities. However, liquid and solid wastes and sludges generated by crude oil and tank bottom reclaimers may not be exempted. Permitting under OCD rules does not necessarily mean your facility is EPA exempt.

If the waste stream from treating crude oil and tank bottoms by your facility contains benzene concentrations of greater than 500 ppb and if that waste is not exempted under EPA interpretation of the oil and gas exclusion, EPA will require that the waste stream be permitted and handled as hazardous waste. Additionally, if any portion of a common facility handling exempt exploration and production wastes is also considered to be treating, storing, or disposing of hazardous waste, then the entire common facility may be subject to EPA regulations which include provisions for substantial hydrogeologic investigations, corrective actions, and post-closure monitoring. There are civil and criminal penalties for failure to comply with "hazardous waste" regulations.

Therefore the OCD strongly recommends that you contact and review your operations with a private consultant or attorney familiar with this new federal rule prior to September 25 to determine the impact of the new regulation at your facility, and for advice as to technical permitting requirements and your potential liability.

Currently, the State of New Mexico is taking action to notify President Bush, the USEPA, and the Department of Energy of the impact of this new rule, and is requesting implementation be delayed for at least six months while the issue is reexamined. However, the outcome of this appeal is far from certain. Enclosed with this letter is a copy of the letter to President Bush. You may also wish to contact members of the New Mexico Congressional delegation regarding this important matter.

If you have any questions you are urged to contact either myself at (505) 827-5812 or Roger Anderson of this office at 827-5884.

Sincerely,

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

Enclosure

cc: NMOCD District Office

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD — KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry • Waste Treatment & Disposal • Equipment Sales

170081 Continued

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
1,1-Dichloroethene	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
trans-1,2-Dichloroethene	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
1,2-Dichloropropane	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
cis-1,3-Dichloropropene	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Ethyl benzene	480000	ug/l	2141	08/17/90	EPA Method 8240	PM
Methylene Chloride	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Tetrachloroethene	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Toluene	850000	ug/l	2141	08/17/90	EPA Method 8240	PM
1,1,1-Trichloroethane	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
1,1,2-Trichloroethane	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Trichloroethene	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Vinyl Chloride	<10000	ug/l	2141	08/17/90	EPA Method 8240	PM
trans-1,3-Dichloropropene	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
1,1,2-Trichloro 1,2,2 TFC	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Xylenes	6600000	ug/l	2141	08/17/90	EPA Method 8240	PM

C. H. Whiteside, Ph.D., President

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

2600 DUDLEY ROAD • KILGORE, TEXAS 75662 — 214/984-0551

Analytical Chemistry • Waste Treatment & Disposal • Equipment Sales

OIL CON DIVISION
RECEIVED
'90 OCT 1 AM 9 56

09/21/90

Environmental Bureau NM Oil D.
PO Box 2088
Santa Fe, NM 87504

Sample Identification: #9007301600 Parabo Disposal
Collected By: Anderson/Olson
Date & Time Taken: 07/30/90 1600
Other:

Water phase from treating Tank 211. Water phase will separate from iron sulfides. Analysis of water phase only.

Lab Sample Number: 170081 **Received:** 08/03/90 Client: SNM1

PARAMETER	RESULTS	UNITS	TIME	DATE	METHOD	BY
Acrolein	<100000	ug/l	2141	08/17/90	EPA Method 8240	PM
Acrylonitrile	<100000	ug/l	2141	08/17/90	EPA Method 8240	PM
Benzene	90000	ug/l	2141	08/17/90	EPA Method 8240	PM
Bromoform	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Bromomethane	<10000	ug/l	2141	08/17/90	EPA Method 8240	PM
Carbon Tetrachloride	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Chlorobenzene	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Chloroethane	<10000	ug/l	2141	08/17/90	EPA Method 8240	PM
2-Chloroethylvinyl ether	<10000	ug/l	2141	08/17/90	EPA Method 8240	PM
Chloroform	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Chloromethane	<10000	ug/l	2141	08/17/90	EPA Method 8240	PM
Dibromochloromethane	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
Bromodichloromethane	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
1,1-Dichloroethane	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM
1,2-Dichloroethane	<5000	ug/l	2141	08/17/90	EPA Method 8240	PM

Continued

Unichem Fined On Hazardous Waste Violations

CHEYENNE, Wyo. (AP) - A chemical company that pleaded guilty to hazardous waste violations in New Mexico and Wyoming has agreed to pay a $1.25 million fine, among the largest ever for such violations, federal prosecutors say.

Unichem International Inc., which mixes and supplies chemical products for the oil industry, pleaded guilty in federal court in Jackson to storing, treating and disposing of hazardous wastes without a permit in Casper and Hobbs, N.M.

"This record-setting penalty furthers our commitment to the stringent enforcement of criminal provisions of environmental statutes," said Richard B. Stewart, assistant attorney general for the Environment and Natural Resources Division of the Department of Justice.

According to a news release from Hobbs-based Unichem, "the company mistakenly believed it was exempt from these laws because of exemptions applicable to oil field wastes."

"Unichem sincerely regrets the violations that have occurred and firmly believes that its acceptance of responsibility and the response to these acts of non-compliance demonstrates Unichem's commitment to full compliance with all laws," Unichem President Jim Britton said.

Wyoming's U.S. Attorney Richard Stacy said Thursday an investigation by the federal Environmental Protection Agency and the Federal Bureau of Investigation began in 1988. Several violations were found, including illegal dumping of hazardous wastes containing acetone, carbon disulfide, ethylbenzene and other toxic substances without a permit into a draw near Douglas.

A news release from the Department of Justice said the company transported similar materials to the Hobbs facility without a permit and subsequently disposed of the materials there without a permit.

"It's unlawful to dump any of these materials unless it's in an authorized place because the materials could leach into groundwater," Stacy said. "It was a pretty aggravated situation. Not a good situation at all."

Waste 8

Continued From Page 1

He didn't know what kind, or if any environmental damage was done.

"They have plead guilty to violating the law - whether there was environmental damage or not," Stacy said.

In addition, Stacy said the company illegally transported similar hazardous chemicals from Casper to Hobbs in trucks without documentation identifying the toxic substances.

"If the truck has a wreck and toxic chemicals spilled all over the highway it's important to know what's all over the road," Stacy said.

The company will also be placed on probation pending the completion of an environmental audit of their facilities and the correction of any violations uncovered by the audit.

"Part of their agreement was they agreed to police their operations completely, and totally reform the way they handle these chemicals," Stacy said.

The case was jointly prosecuted by the U.S. Attorney's office in Wyoming and the Environmental Crimes Section of the Department of Justice.

Officials within the U.S. Attorney's office in New Mexico were not available for comment late Thursday.

Submit 4 Copies
to Appropriate
District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED
'89 NOV 27 AM 10 32
OIL CONSERVATION DIV.
SANTA FE

Form C-134
Aug. 1, 1989

Permit No. H-54
(For Division Use Only)

APPLICATION FOR EXCEPTION TO DIVISION ORDER R-8952
FOR PROTECTION OF MIGRATORY BIRDS Rule 8(b), Rule 105(b), Rule 312(h), Rule 313, or Rule711(I)

Operator Name: Parabo, Inc.

Operator Address: 707 North Leech - Hobbs, NM 88240

Lease or Facility Name Parabo Disposal Facility Location 29 21S 38E
Ut. Ltr. Sec. Twp. Rge

Size of pit or tank: Pits #1, 2, 3, 5, 6, & 7, plus 40 acres of surface evaporation area.

Operator requests exception from the requirement to screen, net or cover the pit or tank at the above-described facility.

X The pit or tank is not hazardous to migratory waterfowl. Describe completely the reason pit is non-hazardous.
These pits contain produced water only which is not hazardous to waterfowl.

1) If any oil or hydrocarbons should reach this facility give method and time required for removal:
Suction pumps and a boat are used on a continuous basis to skim the pits until clean.

2) If any oil or hydrocarbons reach the above-described facility the operator is required to notify the appropriate District Office of the OCD with 24 hours.

_____ Operator proposes the following alternate protective measures:

CERTIFICATION BY OPERATOR: I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature Richard Brakey Title Vice President Date August 16, 1989

Printed Name Richard Brakey Telephone No. (505) 393-7751

FOR OIL CONSERVATION DIVISION USE

Date Facility Inspected 11/20/89

Inspected by Eddie W Seay

Approved by ORIGINAL SIGNED BY JERRY SEXTON
DISTRICT I SUPERVISOR

Title

Date NOV 22 1989

SF

Submit 4 Copies
to Appropriate
District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

RECEIVED
'89 NOV 27 AM 10 32

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-134
Aug. 1, 1989

Permit No. H-55
(For Division Use Only)

APPLICATION FOR EXCEPTION TO DIVISION ORDER R-8952
FOR PROTECTION OF MIGRATORY BIRDS Rule 8(b), Rule 105(b), Rule 312(h), Rule 313, or Rule711(I)

Operator Name: Parabo, Inc.

Operator Address: 707 North Leech - Hobbs, NM 88240

Lease or Facility Name Parabo Disposal Facility Location _____ 29 21S 38E
(Ut. Ltr. Sec. Twp. Rge)

Size of pit or tank: Pit #8 (Mud Pit): 150' X 390'

Operator requests exception from the requirement to screen, net or cover the pit or tank at the above-described facility.

X The pit or tank is not hazardous to migratory waterfowl. Describe completely the reason pit is non-hazardous.
The pit is non-hazardous to waterfowl because of the activity levels around the pit and the close proximity of produced water ponds.

1) If any oil or hydrocarbons should reach this facility give method and time required for removal:

2) If any oil or hydrocarbons reach the above-described facility the operator is required to notify the appropriate District Office of the OCD with 24 hours.

_____ Operator proposes the following alternate protective measures: _____

CERTIFICATION BY OPERATOR: I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature Richard Brakey Title Vice President Date August 16, 1989

Printed Name Richard Brakey Telephone No. (505) 393-7751

FOR OIL CONSERVATION DIVISION USE

Date Facility Inspected 11/20/89

Inspected by Eddie W Seay

Approved by ORIGINAL SIGNED BY JERRY SEXTON
DISTRICT I SUPERVISOR

Title _____

Date NOV 22 1989

84

Submit 4 Copies
to Appropriate
District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

RECEIVED
'89 AUG 24 AM 10 32

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-134
Aug. 1, 1989

Permit No. H-56
(For Division Use Only)

APPLICATION FOR EXCEPTION TO DIVISION ORDER R-8952
FOR PROTECTION OF MIGRATORY BIRDS Rule 8(b), Rule 105(b), Rule 312(h), Rule 313, or Rule711(I)

Operator Name: Parabo, Inc.

Operator Address: 707 North Leech - Hobbs, NM 88240

Lease or Facility Name Parabo Disposal Facility Location ____ 29 21S 38E
(Ut. Ltr. Sec. Twp. Rge)

Size of pit or tank: Pit #4 (BS&W Pit): 420' X 210'

Operator requests exception from the requirement to screen, net or cover the pit or tank at the above-described facility.

X The pit or tank is not hazardous to migratory waterfowl. Describe completely the reason pit is non-hazardous.
Because of the activity levels around this pit and the close proximity of produced water ponds, this pit is non-hazardous to waterfowl.

1) If any oil or hydrocarbons should reach this facility give method and time required for removal:

2) If any oil or hydrocarbons reach the above-described facility the operator is required to notify the appropriate District Office of the OCD with 24 hours.

____ Operator proposes the following alternate protective measures: ____

CERTIFICATION BY OPERATOR: I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature R. Richard Brakey Title Vice President Date August 16, 1989

Printed Name Richard Brakey Telephone No. (505) 393-7751

FOR OIL CONSERVATION DIVISION USE

Date Facility Inspected 11/20/89

Inspected by Eddie Williams

Approved by ORIGINAL SIGNED BY JERRY SEXTON
DISTRICT I SUPERVISOR

Title ____

Date NOV 22 1989

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

October 13, 1989

CERTIFIED MAIL
RETURN RECEIPT NO. P-106-675-126

Mr. Wayne Price, Staff Engineer
PARABO, INC.
P. O. Box 1737
Eunice, New Mexico 88231

Dear Mr. Price:

This letter is in response to your phone call of October 12, 1989, requesting clarification on the type of waste material you may accept. Under Oil Conservation Division's (OCD) approval dated May 15, 1989, issued pursuant to Rule 711 (Commercial Surface Waste Disposal Facilities) and previously as OCD Order R-5516, as amended; and Order R-6940 (approval to operate a crude oil treating plant), PARABO is authorized to accept, for treatment and disposal, oil field produced water, BS & W, crude oil tank bottoms (including those from crude oil treating plants), drilling muds and other fluids used in drilling operations. Based on my review of your Rule 711 application, Parabo is also authorized to accept oil contaminated soils.

I hope this letter provides you with the information you need. If you wish further clarification regarding disposal of other oil field waste, please contact me with specifics.

Sincerely

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/sl

cc: OCD Hobbs Office

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

May 15, 1989

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL - RETURN
RECEIPT NO. P-106 675 054

Mr. Wayne Price
Parabo, Inc.
P. O. Box 1737
Eunice, New Mexico 88231

Re: Parabo Disposal Facility
Lea County, New Mexico

Dear Mr. Price:

The Oil Conservation Division (OCD) has received your submittal furnishing information as required by OCD Rule 711. The submittal, dated March 17, 1989, was received by the OCD on March 20, 1989.

Based on the review of the information submitted, your facility is in compliance with Rule 711 of the Oil Conservation Division Rules and Regulations.

Please be advised that compliance with OCD Rule 711 does not relieve you of liability for your operation under other laws and/or regulations.

I want to thank you for your cooperation in updating your files. If you have any questions, please contact me at (505) 827-5884.

Sincerely,

Roger C. Anderson

ROGER C. ANDERSON,
Environmental Engineer

RCA/dr

cc: Oil Conservation Division
Hobbs, New Mexico

Paraiba
1-28-87

Parabo Inc

1-28-87

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

2509 N. BIG SPRING | P. O. BOX 2110 | MIDLAND, TEXAS 79702-2110

March 15, 1989

Southwest Energy Consultants, Inc.
1601 Rio Grande, Suite 333
Austin, Texas 78701

Re: Minor Permit 08-144
Pen Roy Oil of Odessa, Inc.
Disposal of reclamation plant
waste. Serial #08-3461
Ector County, Texas

Gentlemen:

Pursuant to Rule 8(d)(6)(G), you are hereby authorized to dispose of approximately 1,500 - 5,000 barrels of BS&W from the above referenced facility. The approved disposal method is transporting to Parabo in Eunice, New Mexico.

This minor permit is granted with the provision that all paperwork and reporting procedures are in order with the New Mexico Oil Conservation Commission. The extension to this minor permit will be required on a monthly basis.

Only material generated from the above mentioned site may be disposed of at the above described facility.

Issuance of this permit does not relieve any operator of the duty to file any reports required by any regulatory agency.

The authority granted by this letter expires thirty days from the date of this letter.

Sincerely,

Ronald L. Strong

Ronald L. Strong
District Director

RECEIVED
MAR 17 1989
OIL CONSERVATION DIVISION
SANTA FE

RLS/rfm

cc: New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

March 2, 1989

CERTIFIED MAIL
RETURN RECEIPT NO. P-106 675 482

Mr. Wayne Price
PARABA, INC.
P. O. Box 1737
Eunice, New Mexico 88231

RE: OCD Rule 711 Compliance
Paraba Disposal Facility
Lea County, New Mexico

Dear Mr. Price:

The Oil Conservation Division (OCD) has received your request, dated February 20, 1989 for a thirty (30) day extension to submit informtion pursuant to the OCD letter dated September 2, 1988.

A thirty (30) day extension to April 1, 1989 for submission of the required information in compliance with OCD Rule 711 is approved.

Sincerely

David G. Boyer, Hydrogeologist
Environmental Bureau Chief

DGB/RA/sl

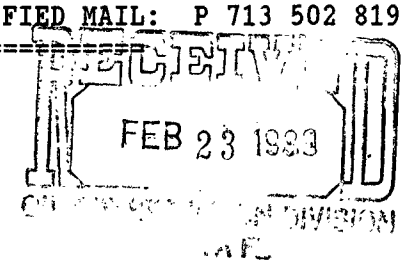
cc: OCD Hobbs Office

PARABO, INC.

P. O. Box 1737
EUNICE, NEW MEXICO 88231

February 20, 1989

VIA CERTIFIED MAIL: P 713 502 819



David G. Boyer, Hydrogeologist
State of New Mexico
Oil Conservation Division
P.O. Box 2088
Land Office Building
Santa Fe, NM 87501

SUBJECT: Rule 711 - Parabo Disposal Facility

Dear Dave:

Per our telephone conversation this date, please accept this as a formal request for a 30-day extension to implement Rule 711 as it pertains to our disposal facility. This letter is in follow-up to the verbal authorization you issued this afternoon.

Taking the 30-day extension into account, the anticipated compliance date is April 1, 1989.

Dave, as always, I appreciate your assistance.

Sincerely,

PARABO, INC.

Wayne Price

Wayne Price
Staff Engineer

LWP:mms

cc: Roger Anderson, New Mexico OCD
Jerry Sexton, New Mexico OCD
Bob Sonnamaker, Parabo, Inc.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

February 14, 1989

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-106 675 480

Mr. Wayne Price
PARABA, INC.
P. O. Box 1737
Eunice, New Mexico 88231

RE: Paraba Disposal Facility
Lea County, New Mexico

Dear Mr. Price:

The Oil Conservation Division (OCD) has received and reviewed your proposal dated February 10, 1989 for remedial action at the above referenced facility.

The remedial action plan which includes remedial work for Pit #6, investigation of fluids in monitor well #85, cleanup of oil on Pit #1 and preventative measures to keep oil from reaching the evaporation pits is hereby approved. The remedial work shall begin immediately upon receipt of this approval. Please notify the OCD when each portion of the plan has been completed.

Parabo is further authorized to place Pit #6 in service for the receipt of produced waters. This authorization will remain in effect only so long as Parabo, Inc. is exhibiting a good faith effort to fulfill its commitments as stated in its February 10, 1989 letter.

Please be advised that this approval does not relieve you of liability should your operation result in actual pollution of surface or groundwaters which may be actionable under other laws and/or regulations.

If you have any questions, please contact Roger Anderson at (505) 827-5884.

Sincerely

William J. LeMay
Director

WJL/RA/sl

cc: OCD Hobbs Office

UNICHEM
INTERNATIONAL

Home Office 707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, TWX 910/986-0010

February 2, 1989

See seperately bound submittal

New Mexico Oil Conservation Division
State of New Mexico
1000 W. Broadway
Hobbs, New Mexico 88240

Attn: Jerry Sexton
Re: Parabo Fluid Levels

Dear Jerry:

This letter is to confirm our conversation regarding the increase of the fluid level in our mud pit, Pit #8.

The fluid level in the mud pit is 3431.5' and needs to be elevated to 3445'. As you know, Pit #8 is completely surrounded by Pit #7. This would then allow the elevation to be increased to 3447'.

Please make this a formal request to amend the existing division order, (order number #R-5516-B), at the Parabo facility for Pit #8 to increase its high level mark to 3447'. In the interim period, it is our understanding we have the approval to add muds and solids above the existing high level mark up to the 3445' mark. This will greatly enhance our operation at this time.

Your expedience in this matter is greatly appreciated and please contact us if you require additional information. Thank you for your cooperation.

Sincerely,

UNICHEM INTERNATIONAL, INC.
Industrial Division

L Wayne Price

L. Wayne Price
Staff Engineer

LWP/rp

UNICHEM
INTERNATIONAL

Home Office 707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, TWX 910/986-0010

December 22, 1988

VIA CERTIFIED MAIL: P 713 502 804

David G. Boyer, Hydrogeologist
State of New Mexico
Oil Conservation Division
P.O. Box 2088
Land Office Building
Santa Fe, NM 87501

SUBJECT: Rule 711 - Rattlesnake Disposal Facility

Dear Dave:

Per your request, enclosed is the $25,000 Surety Bond required for initial compliance with Rule 711 guidelines.

As indicated in my letter of December 6, 1988, Unichem anticipates full compliance in implementing Rule 711 on or before March 26, 1989.

I appreciate your assistance in this matter.

Sincerely,

UNICHEM INTERNATIONAL INC.

Wayne Price
Staff Engineer

LWP:mms

Enclosure

cc: Roger Anderson, New Mexico OCD
Richard Brakey, Unichem International (Rowland Trucking/Parabo)
Mike Williams, New Mexico OCD

To: Diane Richardson 12/27/88

UNICHEM
INTERNATIONAL

Home Office 707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, TWX 910/986-0010

December 6, 1988

VIA CERTIFIED MAIL: P 713 502 803

David G. Boyer, Hydrogeologist
State of New Mexico
Oil Conservation Division
P.O. Box 2088
Land Office Building
Santa Fe, NM 87501

SUBJECT: Rule 711 - Parabo and Rattlesnake Disposal Facilities

Dear Dave:

Please accept this as a formal request for a 60-day extension for implementing Rule 711 as it pertains to our Parabo and Rattlesnake disposal facilities. As you are aware, this request was made during the telephone conversation I had this morning with Roger Anderson of your office, at which time verbal authorization was issued.

Taking the 60-day extension into account, the anticipated compliance date is March 2, 1989, for Parabo and March 26, 1989, for the Rattlesnake facility.

Dave, as always, I appreciate your assistance.

Sincerely,

UNICHEM INTERNATIONAL INC.

Wayne Price
Staff Engineer

LWP:mms

cc: Roger Anderson, New Mexico OCD
Richard Brakey, Unichem International (Rowland Trucking/Parabo)
Jerry Sexton, New Mexico OCD
Bob Sonnamaker, Unichem International (Rowland Trucking/Parabo)

UNICHEM
INTERNATIONAL

Home Office 707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, TWX 910/986-0010

November 30, 1988

VIA CERTIFIED MAIL: P 713 502 802

Mr. Joe La Bauve
Air Quality Bureau
New Mexico Health and Environment Department
Environmental Improvement Division
1190 St. Francis Drive
Santa Fe, NM 87503

SUBJECT: Air Quality Control Regulation (AQCR) 752
Parabo Inc. (Disposal Facility) - Eunice, New Mexico
Unichem International Inc. - Farmington, New Mexico
Unichem International Inc. - Hobbs, New Mexico

Dear Mr. La Bauve:

As we discussed during our telephone conversation this date, Unichem International Inc. is requesting a 180-day extension for completion and submission of the AQCR registration forms for the three facilities listed above.

Because of the amount of material required for proper registration and the somewhat limited time frame for compliance, it has not been possible to meet the completion date of November 30, 1988. From our conversation, it is therefore my understanding that we have until May 30, 1989, to complete the registration process required by AQCR 752.

During our conversation, we also discussed the possibility that Parabo may be exempt from Air Quality Control Regulation 752 under the Oil and Gas Act as a federal exemption. As an oilfield service company, there is a possibility that Unichem may be exempt as well. Based on the potential exemptions, I would appreciate receiving a complete copy of the Air Quality Control Regulations issued by the State of New Mexico, which I believe you indicated would be forthcoming.

Joe, I appreciate your assistance in this matter. Please do not hesitate to contact me if you have any questions or if additional information is required in the interim period.

Sincerely,

UNICHEM INTERNATIONAL INC.

Wayne Price

Wayne Price
Staff Engineer

LWP:mms

cc: David G. Boyer, State of New Mexico OCD
Richard Brakey, Unichem International Inc.
Jerry Golson, Unichem International Inc.
William Ray Hargraves, New Mexico Health and Environment Department
Charles N. Root, Unichem International Inc.
Ted Schlosser, Unichem International Inc.

REED & ASSOCIATES, INC.

FACSIMILE ROUTING SLIP

DATE 9-21-88 TIME 5:15 pm

TO Mr. Wayne Price

FROM REED & ASSOCIATES, INC. -- Midland office /

PAGES 6

If there is a problem with this transmittal, please contact SANDRA ELLIOTT at (915)682-0556.
Should you need to make a return transmittal, our incoming Fax # is (915) 682-6497.

INVESTIGATION OF SAIT WATER FOUND IN MONITOR WELL NOS. 2, 3 AND 71

INTRODUCTION

During routine quarterly sampling in July 29, 1988 of the monitor wells which surround the Parabo facility, high chloride ion concentrations of 88,000 milligrams per liter (mg/l), 49,000 mg/l and 72,000 mg/l, respectively were found in the samples taken from monitor wells MH-2, MH-3 and MH-71. A chloride concentration of 1,700 mg/l found in MH-10 was determined to be representative of naturally occurring chlorides in the Triassic red beds.

In August 1988 a program was implemented to determine the source of the high chlorides in the three monitor wells. The program consisted of the following:

1. Check all the monitor wells at the facility and collect samples from those that contain water. With this information determine whether other wells have been affected.

2. Bail the affected wells daily to determine the persistence of the high chloride water.

3. Drill a patterm of bore holes around the affected wells to identify the source of the high chloride water and to determine the extent of the chloride plume.

The above program has been completed and the sources and extent of the high chlorides have been identified. This report presents the results of the investigation and outlines a proposal for correcting the problem.

The recent survey of all the monitor wells at the facility showed that five of the monitor wells, MH-78 through MH-82, have been destroyed by gravel mining operations which is continuing in the area. Three of the wells, MH-80, 81 and 82, have been redrilled. The other two wells will be redrilled at the conclusion of mining operations in the affected area. The results of redrilling and sampling the new monitor wells are also given in this report.

Preliminary
SUBJECT TO REVISION
DATE 9-21-88

MONITOR WELL SURVEY

On August 8, 1988 all the monitor wells at the Parabo facility were checked. Twenty-seven wells were found to contain water, twenty-seven were dry, five were destroyed by the ongoing gravel mining operations and one (MH-61) could not be found. Three of the twenty-seven wells that contained water (MH-2, 3 and 71) were found to have high chloride ion concentrations. The remaining twenty-four wells contained fresh water resulting from the percolation of rain water into the hole. MH-61 was later found by Parabo personnel and determined to contain high chloride water. Although MH-71 contianed water during the initial survey, subsequent monitoring of the well has found it to be dry.

Bailing of Affected Monitor Wells

Beginning August 10, 1988 the affected wells that still contained water, MH-2, 3, and 61 were bailed on a daily basis (except on weekends) and sampled at the end of the week. Although the chloride content remained quite high, the water level and volume of water bailed from MH-2 and 3 decreased substantially over the next three weeks suggesting that the problem in these wells was temporary or intermittent in nature. Subsequent bore hole drilling around these wells (discussed later) and inspection of the dike just north of MH-2, indicated that salt water had overtopped the dike and saturated the caliche and gravel resulting in the high chloride water found in MH-2 and MH-3.

The response of MH-61 to bailing was opposite to that seen in MH-2 and 3. The water level and the volume of water removed from the well remained relatively unchanged with time. The source of the problem at MH-61 initially appeared to be the same as for MH-2 and 3; being in the same general area. However, subsequent test drilling around the well has not resolved this question.

As stated earlier, MH-71 does not presently contain any water and has been dry since August 8 when all the monitor wells were checked. Consequently, no bailing has been conducted on this well.

TEST DRILLING

During the course of this study a number of bore holes were drilled in the vicinity of MH-2, 3, 61 and 71 in order to define the source and extent of the high chloride problem in these wells. The results for each area are discussed below.

Preliminary
SUBJECT TO REVISION
DATE 9-21-88

Monitor Wells 2 and 3

A total of Twelve bore holes were drilled in the vicinity of MH-2 and 3. The locations of these bore holes are shown on Figure 1. The bore holes range in depth from 30 feet to 40 feet depending on the elevation of the ground surface. Three-inch PVC pipe was placed in some of the holes to prevent callapsing of the walls. The remaining holes were left uncased.

During the drilling of the holes soil samples were collected at 10-foot intervals and a description of the material was made. This information is given in Appendix A. The soils in this area consist mainly of caliche and gravel down to a depth of 10 feet to 23 feet underlain by red and purple clays.

During the drilling of the bore holes, especially around MH-2, it was observed that the caliche and gravel immediately overlying the red beds were wet and apparently saturated with water. Subsequent inspection of the dike in this immediate area (the south side of Pit No. 6) showed high water marks that are above the level of the dike indicating that the dike was overtopped and salt water had gotten into the caliche and gravel.

About a day after the bore holes were drilled they were checked for water. At this time all the holes around MH-2 contained water. Most of the holes around MH-3 also contained water.

Ground Water Quality: The quality of the water in MH-2 and 3 reflect dilution resulting from the percolation of rain water into the caliche and gravel. MH-2, located about 33 feet south of the dike, had a chloride concentration of 93,785 mg/l. MH-3, located roughly 150 feet from the dike (see Figure 1), had a chloride concentration of 54,250 mg/l.

Monitor Well 61

Six bore holes were drilled around MH-6 as shown on Figure 1. These holes range in depth from 35 feet to forty feet. Three of the holes (BH-61A, BH-61B and BH-61C) were uncased while the remaining three holes (BH-61D through BH-61F) contain 3-inch PVC pipe.

A description of the soil samples taken from these bore holes are given in Appendix A. The soil consists of caliche

Preliminary
SUBJECT TO REVISION
DATE 9-21-88

down to a depth of about 10 feet to fifteen feet underlain by reddish brown and purple clays.

At least one day after the boreholes were drilled they were checked for water. All the holes were dry except BH-6F in which the water level was about the same as in MH-61.

The chemical analysis of a water sample taken from MH-61 shows that in contains chlorides of 54,427 mg/l, sulfates of 1151 mg/l and total dissolved solids (TDS) of 109,550 mg/l. This appears to represent pit water which has undergone significant dilution resulting from percolation of rain water into the caliche.

The source of high chloride water in MH-61 is not clear at this time. However, it appears that the high chlorides may be a result of salt water overtopping the dike to the north in the vicinity of MH-2 and 3, and flowing south along the west side of dike H (dike forming the west boundary of pit 6). In the process it becomes diluted with rain water which has percolated into the caliche.

Monitor Well 71

Thirty seven bore holes were drilled in the vicinity of MH-71 and between MH-71 and Pit No. 6 in order to evaluate the high chloride problem in this area. The locations of these borings are shown on Figure 1. The borings range in depth from 30 feet to 70 feet. Most of the holes have been cased with 3-inch PVC pipe, however, some of the holes are uncased.

The soil encountered in these bore holes are similar in lithology to the earlier boreholes around MH-61. It consist of caliche and some gravel underlain by red, reddish brown and purple clays. Soil sample descriptions are given in Appendix A.

Salt water was found in BH-71F, BH-71G, BH-71L, BH-71M, BH-71S, BH-71W, BH-71X, BH-71Y and BH-71Z (see Figure 1). Relatively fresh water was found in BH-71H and BH-71T. The pattern of bore holes that contain salt water basically indicate that the source of the high chloride water is Pit 6. This suggested that dike H (dike which forms the southern boundary of Pit 6) is leaking in the area near BH-71Y and BH-71Z

In an effort to define the location of leaks in or under the dike eleven bore holes were drilled through the dike as shown of Figure 1. These bore holes (BH-P6A through BH-P6J

Preliminary
SUBJECT TO REVISION
DATE 9.21.88

and BH-P6A1) are 40 feet in depth. A description of the soils encountered in these bore holes are given in Appendix A. Eight of the eleven boreholes were cased with 3-inch PVC pipe. The other three bore holes have been plugged with cement.

Water samples taken from the boreholes in the dike are in the process of being analyzed by an independent laboratory. Tasting of the samples performed in the field indicate that the water from the borings are quite salty.

Based on the results of test drilling through the dike it appears that in the area investigated the dike may be improperly tied into the underlying red beds. There is also evidence that some of the material used in constructing the dike may have been of a lower quality.

MONITOR WELLS REPLACED

As stated earlier, five of the monitor wells (MH-78 through MH-82) have been destroyed by ongoing gravel mining operations in the area. Three of the monitor wells (MH-80, 81 and 82) have now been replaced. The remaining two wells will be replaced at the conclusion of the mining operations.

The new monitor wells were drilled to depths of 25 feet (MH-80), 30 feet (MH-81) and 40 feet (MH-82). Each well was cased with 3-inch PVC pipe, the upper five feet cemented then a 2' x 2' x 1' concrete foundation constructed at the surface. Soil sample descriptions for each monitor well are given in Appendix A.

A few days after the monitor wells were drilled they were checked for water. MH-80 and MH-81 contaied fresh water while MH-82 was dry.

RECOMMENDATIONS

Additional test drilling through the dike may be required to fully define the extent of leakage problems associated with the dike. With this in mind, it may be necessary to replace a large segment of the dike in order to correct the leakage problem.

The high chloride water in MH-61 needs to be further

Preliminary
SUBJECT TO REVISION
DATE 9-21-88

assessed to whether it is indeed associated with the overtopping of Pit 5.

Respectfully submitted,

REED AND ASSOCIATES, INC.

Hugh B. Robotham, P. E.

Preliminary
SUBJECT TO REVISION
DATE 9-21-88

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-61D (34.2' NW of MH-61) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown sand	
5-15	Caliche - tan	
15-20	Reddish brown clay with green streaks	
20-25	Purple clay with green inclusions - micaceous	
25-40	Reddish brown and purple clay with green streaks	
	TD 40'	
	Casing: Slotted 20' to 40'	
	Blank +1' to 20'	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-61E (32' West of MH-61) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown sand	
5-15	Caliche - tan	
15-30	Red and purple clay - micaceous	
30-40	Reddish brown to purplish clay with green streaks	
	TD 40'	
	Casing: Slotted PVC pipe 20' to 40'	
	Blank PVC pipe +1' to 20'	

REED & ASSOCIATES, INC.
HYDROLOGISTS AND ENVIRONMENTAL CONSULTANTS
MIDLAND-CORPUS CHRISTI, AUSTIN, TEXAS

WELL NO.____ Page____of____

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-61F (25.8' South of MH-61) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown sand	
5-15	Caliche - damp (85%); gravel (15%)	
15-30	Reddish brown and purple clay with green streaks	
30-40	95% reddish brown clay; 5% green clay	
	TD 40'	
	Casing: Slotted PVC pipe: 20' to 40'	
	Blank PVC Pipe: +1' to 20'	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/17/88 PERFORATIONS

WELL NUMBER BH-71A DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	100% sand; brown	
10-23	Caliche and sand 90%; tan; gravel 10%, slightly moist	
23-30	Reddish brown clay	
30-40	Reddish brown clay	
	TD 40' (No pipe)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/17/88 CASING

WELL NUMBER BH-71B (35' East of A) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	100% sand - brown	
5-10	75% sand-tan; 25% caliche/limestone - white	
10-22	70% sand - orange/tan; 30% caliche	
22-30	Reddish brown to purple clay	
30-40	Reddish brown clay	
	TD 40' (No pipe)	

REED & ASSOCIATES, INC.
HYDROLOGISTS AND ENVIRONMENTAL CONSULTANTS
MIDLAND-CORPUS CHRISTI-AUSTIN, TEXAS

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/17/88 PERFORATIONS

WELL NUMBER BH-71C (43' East of 71B) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - brown	
5-20	Caliche - tan	
20-30	Reddish brown clay	
30-35	As above with streaks of green clay	
	TD 35' (No pipe)	

REED & ASSOCIATES, INC.
HYDROLOGISTS AND ENVIRONMENTAL CONSULTANTS
MIDLAND-CORPUS CHRISTI, AUSTIN, TEXAS

WELL NO.____ Page____of____

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/17/88 PERFORATIONS

WELL NUMBER BH-71D (35' East of C) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand-brown	
5-18	Caliche - tan	
18-20	70% pink clay; 30% gravel	
20-32	Reddish brown to red clay	
32-40	Layers of red and green clay	
40-60	Sand - blue/green; and green clay	
	TD 60'	
	Move east about five feet then drilled to 35 feet. (No pipe)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/17/88 CASING

WELL NUMBER BH-71E (54' East of D) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Sand - brown	
5-10	Caliche/gravel - tan	
10-22	As above	
22-35	Reddish brown clay	
	TD 35' (No pipe)	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/17/88 PERFORATIONS

WELL NUMBER BH-71F (53' East of 71E) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - fine	
5-10	Caliche - tan	
10-20	Caliche and sand - orange/tan, some gravel	
20-22	Chert - hard	
22-35	Reddish brown clay	
	TD 35' Set 35' pipe on 8/18/88	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/17/88 CASING

WELL NUMBER BH-71G (56' East of 71F) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Sand - brown	
5-10	Caliche/sand - tan	
10-20	Caliche/sand - orange/tan	
20-24	Caliche, sand and some gravel	
24-30	Reddish brown to purple - clay	
30-35	Reddish brown clay	
	TD 35' Set 35' pipe on 8/18/88	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/17/88 PERFORATIONS

125' East of MH-71

WELL NUMBER BH-71H (52' East of 71G) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - brown	
5-10	Caliche - tan	
10-20	Caliche with limestone ledges	
20-24	Caliche, as above - 50%; brown clay-50%	
24-30	Reddish brown clay with green streaks	
30-35	Reddish brown clay	
	TD 35' Set 35' pipe on 8/18/88	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/18/88 CASING

WELL NUMBER BH-71I (37' East of 71H) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Sand - brown	
5-10	Caliche - tan	
10-22	85% caliche - tan; 15% gravel - slightly moist	
22-35	Reddish brown clay	
	TD 35' (Set 35' 3-inch PVC pipe: 15-35' slotted)	

REED & ASSOCIATES, INC.
HYDROLOGISTS AND ENVIRONMENTAL CONSULTANTS
MIDLAND-CORPUS CHRISTI-AUSTIN, TEXAS

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/18/88 PERFORATIONS

WELL NUMBER BH-71J (35' East of 71I) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - brown	
5-10	Caliche - tan/orange; few gravels	
10-21	75% caliche - tan; 25% gravel	
21-30	Reddish brown to purplish clay	
30-35	Reddish brown clay	
	TD 35' (Set 35 feet of 3-inch PVC pipe; slotted 15-35')	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/18/88 CASING

WELL NUMBER BH-71K (37' East of 71J) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Sand - brown	
5-10	Caliche - tan	
10-18	60% caliche - tan; 40% gravel	
18-20	Reddish brown to purple clay	
20-30	As above	
30-35	Reddish brown clay (got into green clay)	
	TD 35' (No pipe)	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/18/88 PERFORATIONS

(ENE of MH-71)

WELL NUMBER BH-71L (25' East of 71M) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
5- 5	Sand - brown	
5-10	Caliche - tan/pinkish	
10-20	Caliche and sandy clay - light brown to tan	
20-30	70% caliche; 30% gravel	
30-35	Reddish brown clay	
35-40	Green sandy clay	
	TD 40' (Set 40' pipe: slotted 20-40')	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/18/88 CASING

(NE of MH-71;

WELL NUMBER BH-71M 25' W of BH-71L) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Sand - brown	
5-10	Sandy clay - brown/tan; few gravel	
10-20	80% sandy clay - light brown to tan; 20% caliche	
20-30	Caliche 85%; gravel 15%	
30-33	Reddish brown - clay	
33-35	Green clay	
	TD 35' (Set casing-35', 15-35' slotted)	

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CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/18/88 PERFORATIONS

(22.3' North of MH-71)

WELL NUMBER BH-71N (23' West of 71M) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown sand, loose	
5-10	Caliche - cream/tan	
10-20	Caliche as above	
20-28	Caliche - 70%, tan; gravel-30%	
28-30	Brown to reddish brown clay	
30-35	Reddish brown clay with green streaks	
	TD 35' (Set 35' casing: slotted from 15 to 35')	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/18/88 CASING

WELL NUMBER BH-710 (41' West of BH-71N) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown/tan sand	
5-10	100% caliche-tan	
10-20	As above	
20-30	80% caliche as above; 20% gravel	
30-35	Reddish brown clay	
	TD 35' (No pipe)	

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LOCATION Eunice, New Mexico CASING

DATE 8/18/88 PERFORATIONS

WELL NUMBER BH-71Q (13' West of MH-71) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown sand	
5-10	Caliche - tan	
10-20	100% caliche - tan	
20-30	70% caliche as above; 30% gravel	
30-35	Reddish brown clay	
	TD 35' (No pipe)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/18/88 CASING

WELL NUMBER BH-71R (18.8' South of MH-71) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Brown sand	
5-10	Caliche - tan	
10-20	80% light brown clay; 20% gravel	
20-30	85% caliche-tan; 15% fine gravel	
30-35	Brown to reddish brown clay	
	TD 35' (No pipe)	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/18/88 PERFORATIONS

WELL NUMBER BH-71P (14.5' East of MH-71) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown sand	
5-10	Caliche - tan	
10-20	Caliche - tan	
20-30	90% caliche; 10% gravel	
30-35	Reddish brown and green clay	
	TD 35' (Set pipe on 8/22/88) Slotted 15-35'	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/22/88 CASING

WELL NUMBER BH-71S (23' East of BH-71L) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - brown	
5-10	Caliche - tan	
10-20	Caliche as above	
20-30	80% caliche - light brown to tan; 20% gravel	
30-40	Green sandy clay	
	TD 40' (Set pipe; 40' - 20 to 40' slotted	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/22/88 PERFORATIONS

WELL NUMBER BH-71T (33' East of BH-71S) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown sand	
5-10	Caliche - tan/cream	
10-20	Caliche - tan	
20-31	75% caliche; 25% gravel	
31-34	Reddish brown clay	
34-35	Green clay	
	TD 35' (Set 35' pipe; slotted 15-35')	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/22/88 CASING

WELL NUMBER BH-71U (37' East of BH-71T) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-20	80% sand; 20% clay; rust/light brown	
20-28	Caliche - tan 90%; 10% gravel	
28-35	Reddish brown to brown clay	
	TD 35' (Set 35' pipe; slotted 15-35')	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/22/88 PERFORATIONS

WELL NUMBER BH-71V (44' East of 71U) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - brown	
5-25	80% caliche - tan; 20% gravel	
25-35	Brown to reddish brown clay	
	TD 35' (No pipe)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/22/88 CASING

WELL NUMBER BH-W (20' East of BH-71P) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - brown	
5-20	Caliche - tan	
20-30	As above	
30-40	Green sandy clay	
	TD 40' (Set PVC pipe: 20 - 40' slotted)	

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LOCATION Eunice, New Mexico CASING

DATE 8/22/88 PERFORATIONS

(East of BH-R)

WELL NUMBER BH-71X (18.2' South of BH-71W) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - brown	
5-20	Caliche - tan 90%; gravel 10%	
20-32	Caliche - tan 85%; gravel 15%	
32-40	Green sandy clay (slightly damp)	
	TD 40' (Set PVC pipe; 20 - 40' slotted)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/22/88 CASING

(NNW of BH-71G;

WELL NUMBER BH-71Y 10' West of BH-71G) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 4	Sand - brown	
4-20	Caliche - tan 80%; gravel 20%	
20-23	Same	
23-30	Reddish brown clay	
	TD 30' (Set 30' pipe - 10 to 30' slotted)	

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LOCATION Eunice, New Mexico CASING

DATE 8/22/88 PERFORATIONS

WELL NUMBER BH-71Z (34.3' East of BH-71Y) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 4	Sand - brown	
4-22	70% caliche - tan; 30% gravel	
22-30	Reddish brown clay	
	TD 30' (Set 30' pipe; 10'-30' slotted)	

LOCATION Eunice, New Mexico S.W.L.

DATE 7/22/88 CASING

WELL NUMBER BH-71AA (42.3' East of BH-71Z) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 4	Sand - brown	
4-21	75% caliche; 25% gravel	
21-30	Reddish brown clay	
	TD 30' (Set 30' pipe; 10 to 30' slotted)	

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LOCATION Eunice, New Mexico CASING

DATE 8/22/88 PERFORATIONS

WELL NUMBER BH-71BB (33.4' East of BH-71AA & North of 71I DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 4	Sand - brown	
4-19	Caliche - tan 70%, gravel 30%	
19-30	Reddish brown clay	
	TD 30' (Set pipe: 10-30' slotted)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/22/88 CASING

WELL NUMBER BH-71CC (NNE of 71E & 10' East of 71E) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-10	Sand - brown	
10-19	Caliche - tan 85% gravel 15%	
19-30	Reddish brown clay	
	TD 30'	

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LOCATION Eunice, New Mexico CASING

DATE 7/22/88 PERFORATIONS

WELL NUMBER BH-71DD (20' East of BH-71Z) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 4	Sand - brown	
4-22	Caliche and gravel	
22-30	Reddish brown clay	
	TD 30' (No pipe)	

LOCATION Eunice, New Mexico S.W.L.

DATE 7/29/88 CASING

WELL NUMBER BH-71EE (115' South of BH-71R) (20' West of R) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Sand - brown	
5-20	Caliche-80%, gravel-20%	
20-33	60% caliche - tan; 40% gravel	
33-41	Green sandy clay	
41-42	Reddish brown clay	
	TD 42' (Set pipe: 22-42' slotted)	
	8/30/88 - Went deeper from 42' to 65'	
42-63	Green sandy clay	
63-65	Reddish brown clay	
	TD 65' (Reset pipe to 65': 25-65' slotted)	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/29/88 PERFORATIONS

WELL NUMBER BH-71FF (42.8' East of BH-71EE) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	Clayey sand - brown	
10-20	Caliche 95%; gravel 5%	
20-32	Caliche 80%; gravel 20%	
32-65	Green sandy clay	
65-67	Reddish brown clay	
	TD 67' (Set pipe: 27-67' slotted)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/29/88 CASING

WELL NUMBER BH-71GG (approx. 40' East of 71FF) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Sand - brown	
5-10	Caliche - tan	
10-20	Clayey caliche - light brown/tan 90%; gravel 10%	
20-35	Caliche 75%; gravel 25%	
35-65	Green sandy clay	
65-67	Reddish brown clay	
	TD 67' (Set PVC pipe: 27-67' slotted)	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/30/88 PERFORATIONS

WELL NUMBER BH-71HH (43' East of 71GG) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Sand - brown	
5-20	Caliche - tan (80%), gravel (20%)	
20-30	Same	
30-63	Green sandy clay	
63-65	Reddish brown clay	
	TD 65' (Set PVC 3" pipe: slotted 25 to 65')	

LOCATION PARABO S.W.L.

DATE Eunice, New Mexico CASING

WELL NUMBER BH-71II (50' East of BH-71HH) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Brown sand	
5-30	Caliche 80%; gravel 20%	
30-44	Green sandy clay	
44-45	Red clay	
45-60	Green, sandy clay	
60-62	Reddish brown clay	
	TD 62' (Set 3" PVC pipe - slotted 22-62')	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/29/88 PERFORATIONS

(Even with BH-71CC

WELL NUMBER BH-P6A West end) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-20	Red clay - dyke material	
	Problems	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/29/88 CASING

(SWL 4.5' below casing)

WELL NUMBER BH-P6B (3.25' below ground l) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-30	Red clayey - dyke	
30-40	Reddish brown clay	
	TD 40' (Set casing: 20-40' slotted)	
	BH-P6C (20' East of P6B)	
0-20	Red clay	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/30/88 PERFORATIONS

WELL NUMBER BH-71JJ (45' West of BH-71EE) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Brown sand	
5-20	Caliche 75%; gravel 25%	
20-35	Caliche 70%; gravel 25%; clay 5%	
35-65	Green sandy clay	
65-67	Reddish brown clay	
	TD 67' (No pipe)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/30/88 CASING

WELL NUMBER BH-71KK (South of BH-71T) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0- 5	Brown sand	
5-30	75% caliche; 25% gravel	
30-32	Brown sandy clay	
32-68	Green sandy clay	
68-70	Reddish brown clay	
	TD 70' (Set pipe 3": 30-70' slotted)	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-P6D (20' East of BH-P6C) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	95% red-clay; 5% green clay	
10-20	95% red clay; 3% caliche/gravel; 2% green clay	
20-40	100% reddish brown clay; trace caliche	
	TD 40' (lost no water)	
	Casing: Slotted PVC pipe: 20' to 40'	
	Blank PVC pipe: +1' to 20'	
	Jetting: Jet hole - making mud	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-P6E (20' East of BH-P6D) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	100% red clay; trace green clay	
10-20	95% red clay; 5% green clay	
20-30	90% reddish brown clay; 10% green clay; trace caliche	
30-40	100% red clay	
	TD 40' (Lost no water)	
	Casing: Slotted PVC pipe: 20' to 40'	
	Blank PVC pipe: +1' to 20'	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-P6F (20' East of BH-P6E) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-20	95% red to reddish brown clay; 5% green clay	
20-30	90% red to purple clay; 10% green clay; thin layers of caliche/gray at 28'	
30-40	Reddish brown clay; thin layer of caliche at 34'-35'	
	TD 40' (No water lost in hole)	
	Casing: 20' to 40' slotted PVC pipe	
	0 to 20' blank PVC pipe	
	Jetting: Jet hole - making some mud	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-P6G (20' East of BH-P6F) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-20	95% red to purple clay; 5% green clay; trace sandy clay-tan	
20-30	Reddish brown clay; trace green clay	
30-40	85% red clay; 15% green clay	
	Lost water in hole	
	TD 40'	
	Casing: 20' to 40' slotted PVC pipe (3")	
	+1' to 20' blank PVC pipe (3")	
	Jetting: Jet water from hole - making salt water	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-P6H (20' East of BH-P6G) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-25	95% red clay; 5% green clay	
25-30	90% red to purple clay; 10% green clay	
30-35	Red to reddish brown clay	
35-40	Caliche and gravel	
	TD 40' (Hole filled in about 2')	
	Casing: 18' to 38' slotted PVC pipe (3")	
	+1' to 18' Blank PVC pipe (30")	
	Jetting: Jet water from hole	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/15/88 PERFORATIONS

WELL NUMBER BH-P6I (20' East of BH-P6H and North of BH-71AA) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-20	Red to reddish brown clay	
20-28	Same	
28-40	90% red to purple clay; 10% green clay	
	TD 40' (Hole filled in to 30')	
	Set casing: 10' to 30', Slotted PVC pipe (3")	
	+1' to 10' Blank PVC pipe (3")	
	Jetting: Jet hole from 20' - appears to be making water	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 9/16/88 PERFORATIONS

WELL NUMBER BH-P6J (35' East of BH-P6I; North of BH-71BB) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-19	95% red clay; 5% green clay	
19-20	Caliche and gravel (about 8 inches) and red clay	
20-30	85% red clay; 15% green clay; trace caliche	
30-40	95% red clay; 5% green clay	
	TD 40'	
	Casing: Slotted 3" PVC pipe: 20' to 40'	
	Blank 3" PVC pipe: +1' to 20'	
	Jetting: Jet water from hole	

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LOCATION Eunice, New Mexico CASING

DATE 9/16/88 PERFORATIONS

WELL NUMBER BH-P6A1 (30' West of BH-P6A) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 20	95% red clay; 5% green clay	
20- 30	95%red clay; 4% green clay; 1% caliche and gravel	
30- 40	95% reddish brown clay; 5% green clay; trace caliche / gravel	
	TD 40'	
	Casing: Slotted 3" PVC pipe: 20'to 40'	
	Blank 3" PVC pipe: +1'to 20'	
	Jetting: Jet water from hole	

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WELL NO.____ Page____of____

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/30/88 PERFORATIONS

WELL NUMBER MH-80 DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 2	Caliche/clay/gravel	
2-12	80% red clay; 20% green clay	
12-19	Deep red to purplish clay	
19-25	Red clay with green inclusions	
	TD 25'	
	Screen: 5' to 25' (3" slotted PVC pipe)	
	Casing: +1.5' to 5' (3" PVC pipe)	
	Cement: 0-5' and 2'x2'x1' concrete foundation	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/30/88 CASING

WELL NUMBER MH-81 PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-12	Caliche and clay 75%; gravel 25%	
12-30	Deep red to purplish clay	
	TD 30'	
	Screen: 10' to 30' - 3" slotted PVC pipe (cap on bottom)	
	Casing: +1.5' to 10' - 3" PVC pipe	
	Cement: 0-5' and 2'x2'x1' concrete foundation	

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LOCATION Eunice, New Mexico CASING

DATE 8/30/88 PERFORATIONS

WELL NUMBER MH-82 (200' North of MH-3) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	Fill material - caliche, sand	
10-19	Caliche - tan 75% ; gravel - multicolored 25%	
19-40	Reddish brown clay	
	TD 40'	
	Screen: 20' to 40' (3" slotted PVC pipe)	
	Casing: +1.5 to 20' (3" PVC pipe)	
	Cement: 0-1 foot and 2'x2'x1' concrete foundation)	
	Had problems drilling hole - loose material 0-20'	

LOCATION S.W.L.

DATE CASING

WELL NUMBER PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSITY

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LOCATION EUNICE, NEW MEXICO CASING

DATE 8/16/88 PERFORATIONS

22.5'

WELL NUMBER BH-3A (N E of MH-3) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	Fill material, reworked caliche and sand	
10-20	Caliche; brown/tan	
20-30	100% purple to red clay	
30-40	95% purple to reddish clay, some green clay (5%)	
	TD 40' (Set 40 feet of 3-inch PVC pipe, 20 feet slotted)	

LOCATION EUNICE, NEW MEXICO S.W.L.

DATE 8/16/88 CASING

13.5'

WELL NUMBER BH-3B (East of MH-3) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-10	Loose - no returns	
10-20	Caliche/gravel - limited returns, loose	
20-30	Purplish and red clay with green inclusions	
	TD 30 feet (Set 30 feet pipe - 20' slotted)	

CLIENT PARABO S.W.L.

LOCATION EUNICE, NEW MEXICO CASING

DATE 8/16/88 PERFORATIONS

WELL NUMBER BH-3C (30' N NE of MH-3) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	Fill material - caliche	
10-22	Caliche (70%); multicolored gravels (30%)	
22-30	100% purplish/red clay with few green inclusions	
30-40	100% clay as above	
	TD 40 feet (Set 40' PVC pipe - 20' slotted)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/16/88 CASING

WELL NUMBER BH-3D (26.5' North of MH-3) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-10	Fill material - caliche, tan	
10-23	Caliche - 80%; multicolored gravels (fine) - 20%	
23-30	Reddish brown clay - 100%	
30-40	100% reddish brown to purplish clay with some green inclusions	
	TD 40'	
	Set 40' of 3" PVC pipe - slotted 20'-40'	

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LOCATION Eunice, New Mexico CASING

DATE 8/16/88 PERFORATIONS

WELL NUMBER BH-3E (NW of MH-3) 33' DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-20	Fill material; caliche - tan	
20-30	Purplish to reddish brown clay with some green inclusions	
30-40	90% purplish to red clay; 10% green clay	
	TD 40' (Set 40' PVC pipe - slotted 20'-40')	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/16/88 CASING

WELL NUMBER BH-3F (West of MH-3) 23.0' PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-10	85% caliche / limestone - tan; 15% gravel - wet on top of red bed	
10-20	100% reddish to purple and green clay	
20-30	100% reddish brown and purple clay	
	TD 30' (No pipe)	

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LOCATION Eunice, New Mexico CASING

DATE 8/16/88 PERFORATIONS

20.7'

WELL NUMBER BH-3G (South of MH-3) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-12	Caliche/sand/gravel	
12-20	Reddish brown to purplish clay with some green inclusions	
20-30	100% purple to red clay with some green inclusions	
	TD 30' (No pipe)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/16/88 CASING

19.5'

WELL NUMBER BH-2A (West of MH-2) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-10	Caliche, sand and gravel	
10-18	Caliche - tan and gravel - multicolored (damp)	
18-20	Purple clay	
20-35	Purple to red clay with white inclusions	
	TD 35' (No pipe)	

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LOCATION Eunice, New Mexico CASING

DATE 8/16/88 PERFORATIONS

WELL NUMBER BH-2B (North of MH-2; between Pit 5 & MH-2) - 10.4' DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	Caliche - light brown to tan	
10-18	50% caliche - tan; 50% fine multicolored gravel; damp	
18-20	Purple clay	
20-30	Reddish brown and purple clay; some green/white specks	
30-35	100% purple clay	
	TD 35' (No pipe)	
	Parabo bought 200' of pipe	
	Started using at MH-2	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/16/88 CASING

WELL NUMBER BH-2C (ENE of MH-2) 20.7' PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-10	Caliche - light brown to tan	
10-18	60-70% caliche-tan; 30-40% gravel (slightly damp)	
18-20	Purple clay	
20-30	Reddish brown and purple clay	
30-35	Purple clay	
	TD 35' (No pipe)	

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LOCATION Eunice, New Mexico CASING

DATE 8/17/88 PERFORATIONS

(NW corner of Pit 6)

WELL NUMBER BH-61A (62' N of MH-61) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0-10	Caliche - tan	
10-15	85% caliche - tan; 15% fine gravel (damp)	
15-20	Reddish brown clay	
20-30	Red and purple clay with green streaks	
30-35	As above	
	TD 35' (No pipe)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/17/88 CASING

WELL NUMBER BH-61B (Approx. 140' SSW of MH-61) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSI
0-10	Caliche -50%, pink clay-50%	
10-20	Reddish to purple clay	
20-30	Reddish brown clay with green streaks	
30-40	As above	
	TD 40' (No pipe)	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/16/88 PERFORATIONS

WELL NUMBER BH-2D (20.6' SE of MH-2) DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Fill material - caliche and gravel	
5-10	Caliche 50%; tan to light brown; gravel 50%; fine multicolored	
10-22	Same as 5-10 (damp)	
22-30	Purple to red clay with streaks of green clay	
30-40	Same	
	TD 40' (Set 3-inch PVC pipe, 20-40' slotted)	

LOCATION Eunice, New Mexico S.W.L.

DATE 8/17/88 CASING

WELL NUMBER BH-2E (19' SW of MH-2) PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 5	Fill material - caliche, sand and gravel	
5-10	Caliche-tan	
10-20	80% caliche - tan; 20% fine gravel	
20-22	Same as above (damp)	
22-30	Reddish brown to purple clay	
30-40	Red and purple clay	
	TD 40' (Set pipe - 20-40' slotted)	

CLIENT PARABO S.W.L.

LOCATION Eunice, New Mexico CASING

DATE 8/17/88 PERFORATIONS

WELL NUMBER BH-61C (approx. 150' West of BH-61B DRILLER

ELEVATION

INTERVAL	SAMPLE DESCRIPTION	POROSITY
0- 3	Sand - tan/rust	
3-10	Caliche - tan/cream	
10-17	As above	
17-20	Purple and red clay	
20-30	Reddish brown clay	
30-40	As above	
	TD 40' (No pipe)	

LOCATION S.W.L.

DATE CASING

WELL NUMBER PERFORATIONS

ELEVATION DRILLER

INTERVAL	SAMPLE DESCRIPTION	POROS

REED & ASSOCIATES, INC.
HYDROLOGISTS AND ENVIRONMENTAL CONSULTANTS
MIDLAND-CORPUS CHRISTI-AUSTIN, TEXAS

UNICHEM
INTERNATIONAL

Home Office 707 N. Leech, P.O. Box 1499 / Hobbs, NM 88240 / Ph. 505/393-7751, TWX 910/986-0010

November 23, 1988

VIA CERTIFIED MAIL: P 713 502 801

David G. Boyer, Hydrogeologist
State of New Mexico
Oil Conservation Division
P.O. Box 2088
Land Office Building
Santa Fe, NM 87501

SUBJECT: Parabo Disposal Facility

Dear Mr. Boyer:

The enclosed report, prepared by Reed & Associates, Inc., represents a comprehensive investigation of the monitor hole situation at Parabo. The report also includes recommendations for remedial action.

At this point, the information is being provided for your reference--I will keep you posted regarding further developments. In the meantime, please do not hesitate to contact me if you have any questions.

Sincerely,

UNICHEM INTERNATIONAL INC.

Wayne Price
Staff Engineer

LWP:mms

Enclosure

Copy

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

September 2, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Bob Sonnamaker
PARABO, INC.
P. O. Box 1737
Eunice, New Mexico 88231

Dear Mr. Sonnamaker:

Commercial surface waste disposal facilities in New Mexico are now regulated by Oil Conservation Division (OCD) Rule 711 (enclosed). This rule, which became effective June 6, 1988, outlines specific information required by the OCD to permit commercial surface disposal facilities. Although your facility was previously permitted by the Division through a hearing process, certain information now required by Rule 711 must be supplied by Parabo, Inc. in order for the facility to come into compliance with the new rule.

The following information must be furnished to the OCD within 120 days:

1. Contact person's name and phone number.

2. Names and addresses of facility site landowners and landowners of record within one-half mile.

3. Diagram of facility indicating location of fences, cattleguards and tanks.

4. Routine inspection and maintenance plan for checking water levels, siphons, and berms as well as monitor wells.

5. Closure plan.

6. Affidavit of verification by an authorized representative of the company.

Public Notice requirements were fulfilled through the hearing process, so no additional public notice is required.

If Parabo, Inc. has not already fulfilled the $25,000 bond requirement or the annual status report, it has until December 30, 1988 to do so. Please contact me in Santa Fe at 827-5884, if you have any questions or if I can be of any assistance.

Sincerely,

Jami Bailey

Jami Bailey
Geologist III

JB:sl

Enclosure

cc: OCD - Hobbs

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

[X] Telephone [ ] Personal	Time 7:45	Date 8/18/88

Originating Party	Other Parties
Jami Bailey	Eddie Seay

Subject: Parabo

Discussion: Drilling on a 10'-12' grid around MW's 2, 3, 10, + 11 showed no leaking from the pits - Apparently the siphon pipes had plugged + the water levels in the pits had risen too high, resulting in overflow through the soil. Pit levels are down below maximum allowable levels + water levels in MW's are decreasing. Reed + Assoc. report will be in next week. Eddie is requiring them to resurvey pits + install new markers so levels will not reach overflow again 4/o being noticed. New wells to replace destroyed wells on NE side of facility will be installed.

Conclusions or Agreements:

Distribution:

Signed Jami Bailey

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

February 2, 1987

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

MEMORANDUM

TO: DAVID BOYER, ENVIRONMENTAL BUREAU CHIEF

FROM: JAMI BAILEY, FIELD REPRESENTATIVE
ROGER ANDERSON, ENVIRONMENTAL ENGINEER

SUBJECT: PARABO INSPECTION TRIP, JANUARY 28, 1987

On January 28, 1987, while on a scheduled OCD inspection at Parabo, Inc., Eunice, New Mexico, we observed two EID employees, Jerry Koschal and Kevin Lambert, drive on to the premises. Parabo, Inc. is clearly an OCD-regulated facility, as it is an oilfield service company, an oil reclaiming plant and disposal facility for produced water, BS&W, and drilling solids.

Jami Bailey walked over to the EID vehicle, recognizing Jerry Koschal, and inquired as to their business at the facility. Jerry said that Kevin and a Mr. Calhoun, who apparently is an operator of an EID-regulated brine station, had driven through the facility earlier that morning, and that now Kevin was showing Jerry around the premises. During the discussion, Jami mentioned that it was an OCD-permitted facility, and assumed the EID employees would leave. When she returned to the facility office trailer, the EID personnel turned the vehicle around and proceeded to drive throughout the facility on the private roads.

Don McLean, manager of the facility, had seen Kevin and Mr. Calhoun drive past the office that morning and had wondered why a competitor in the trucking business was on his property. For neither visit was any explanation given to the manager of Parabo, Inc. as to what governmental agency personnel were inspecting the facility, who the personnel were, or for what purpose they were on his facility. Mr. McLean was not notified prior to EID's entering the facility, given an opportunity to accompany them on the tour, given an opportunity to refuse permission for a competitor to enter the facility, or notified when they were leaving the facility. Mr. McLean had no idea who was there, or why.

The actions taken by the EID personnel were clearly in violation of the regulations as issued by HED, specifically Regulation HED 86-14 (EID) as promulgated on December 30, 1986 (attached). The actions are also in contradiction with the goals of the EID, specifically "Increased efforts in consultation with the regulated community ... "(emphasis added) (attached).

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

HOBBS DISTRICT OFFICE

GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161

MEMO TO: Jerry sexton

FROM: Paul F. Kautz

DATE: January 2, 1987

SUBJECT: New Dikes at Parabo Inc.

On April 21, 1986, I inspected the new dikes at Parabo Inc. The construction of the dikes was satisfactory. I witnessed the surveying of the dikes. The elevations of the dikes were higher than the minimum elevations required. The lowest spot on the dikes was three (3) inches above the minimum required elevation.

Copy to: Charles Roybal
Dave Boyer

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

December 23, 1986

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Mr. Hugh Robotham
Reed & Associates, Inc.
1109 North Big Springs
Midland, Texas 79701

Re: Proposed Amendments to Order No. R-5516,
Parabo, Inc.

Dear Mr. Robotham:

We have reviewed and hereby provisionally approved your application for proposed amendment to Order No. R-5516 for Parabo, Inc. This application consists of materials dated May 28, 1986 (received by the OCD on August 15, 1986) and December 2, 1986. Final approval will be contingent on an inspection by OCD field personnel.

Please be advised that approval of the design does not relieve you of liability should the operation result in actual pollution of surface or ground waters which may be actionable under other laws and/or regulations.

Please notify this office upon completion of construction so that an inspection may be scheduled.

Sincerely,

R. L. STAMETS,
Director

RLS/JB/dr

cc: Oil Conservation Division
Hobbs, New Mexico

December 2, 1986

Ms. Jami Bailey, Field Representative
Oil Conservation Division
Energy and Minerals Department
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Proposed Amendments to Order
No. R-5516, Parabo, Inc.

Dear Ms. Bailey:

This letter addresses the comments and questions that were raised in your letter of September 3, 1986 regarding the proposed amendments to Order No. R-5516. Each item is discussed below:

1. Damaged Monitor Wells: The three monitor wells that have been damaged during mining operations are MW-80, 81 and 83. Two of the wells, MW-81 and 83, have already been repaired and are in use. MW-80 has been buried under material from the gravel mining operations and has not been found. This well will be replaced in the next few weeks.

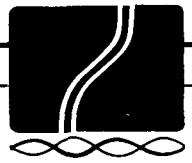
2. Fluid Level in Pit No. 7: As noted in our letter of May 28, 1986, both the cutoff dike and dike I have been constructed to an elevation of 3450 feet. The original elevation of dike I was 3443 feet but it was raised to 3450 feet to be consistent with the elevation of dike H and the cutoff dike.

HYDROLOGISTS & ENVIRONMENTAL CONSULTANTS
1109 North Big Spring Midland, TX 79701 (915) 682-0556
Midland Corpus Christi Austin

The permitted fluid level in Pit No. 7 is 3440 feet. Since the entire dike around this pit has been constructed to 3450 feet, Parabo, Inc. is requesting that the order be amended to allow for a maximum fluid surface elevation of 3447 feet. The required 3-foot freeboard would still be maintained with the higher fluid level.

3. Engineering Specifications for Dikes: The dikes have been constructed to the same design specifications as previous dikes. These specifications are as follows: The width of the dike from top to base is about 14 feet. The dike is constructed of recompacted red clay (Triassic red beds). It is tied into the underlying Triassic red bed strata by cutting a 2-foot deep trench into the Triassic then building the dike to the desired elevation. In construction, the clay is laid in 6" to 8" lefts, wetted then compacted to over 100% of Proctor density. The clay has a Proctor density of about 104 lb/ft^3.

4. Disposal of Sludge and Oil in Pit No. 8: Pit No. 8 will not be closed in the foreseeable future. In the meantime, the pit will continue to be used as a mud pit. The pit (No. 8) will be protected from salt water intrusion from pit No. 7 by the dike which surrounds it. This dike will be built up to an elevation of 3450 feet (which is the same elevation as dike I.) In the future, when a new mud pit is opened at a different locality, pit No. 8 will be closed. At this time the oil and the fluid will be transferred to the new mud pit. The pit will be allowed to dry out then it will be covered with one foot of



red clay and two feet of ordinary fill material.

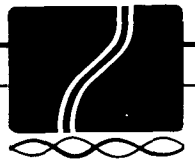
5. Plugging of Abandoned Monitor Wells: The configuration of pit No. 7 as previously approved by the Oil Conservation Division (OCD) is outlined in yellow on Figure 1. This map (Figure 1) was furnished with the leter of May 8, 1986. The pit (as shown) is now ready to accept salt water.

   Monitor wells 53, 64 through 67 and MW-77 through 87 will serve as monitoring wells for this pit for the time being. If the proposed amendment to Order R-5516 for enlarging pit No. 7 is granted by the OCD, MW-53 and 64 through 67 would fall inside the pit and therefore would have to be abandoned. The enlarged pit would not require installation of any new monitoring wells. The existing monitor wells, MW-62, 68, 69 and 77 through 87, would provide adequate protection.

   The abandoned monitor wells, MW-53 and 64 through 67 will be plugged by pumping into and filling the well with thinly mixed Class C neat cement.

6. Monitor Wells Containing Fuild: The monitor wells are checked for water every three months. The last measurements were made in October, 1986. A representative of the OCD office in Hobbs is usually present to witness and record the measurements. The information should be on file in the Hobbs office.

   The last measurements in October showed that MW-79 contained 17 feet of water with a resulting static level of 43 feet. MW-83 contained 20.5 feet of water and had a static water level of



24 feet. MW-78 was damp in the bottom of the well but did not contain standing water.

The chloride ion concentrations of the water in MW-79 and 83 were 520 mg/l and 8 mg/l, respectively.

The source of the water in these wells is most likely to be percolation from rainfall. MW-83 is reported to have ponded water around it.

If you have additional questions or comments regarding this matter, please do not hesitate to contact me in the Midland office.

Very truly yours,

REED AND ASSOCIATES, INC.

Hugh B Robotham

Hugh B. Robotham

HBR:lb

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501-2088
(505) 827-5800

September 3, 1986

Mr. Hugh B. Robotham
Reed & Associates, Inc.
1109 North Big Spring
Midland, Texas 79701

RE: PROPOSED AMENDMENT TO PERMIT AND CONSTRUCTION OF CUTOFF DIKE,
PARABO, INC.

Dear Mr. Robotham:

On August 15, 1986, we received your letter dated May 28, 1986, regarding proposed amendments to Order No. R-5516-A and subsequent amendments. The request was made to close pit No. 8, enlarge pit No. 7, construct more dikes, and plug and abandon monitor wells No. 53 and 64 through 67.

The following comments and questions need to be addressed:

1. Three of the monitor wells 77 through 87 have been damaged during mining operations and "will be repaired or replaced as needed." Which specific wells are damaged and when will they be repaired or replaced?

2. Your letter states that the fluid level in pit No. 7 will be kept at a minimum of 3 feet below the top of the dike resulting in a maximum water surface elevation of 3447. Order No. R-5516-C states that the maximum water level in Pit No. 7 will be 3440 feet above sea level. Please explain the discrepancy.

3. Please submit engineering specifications on the proposed dikes.

4. Where specifically will the sludge and oil presently in pit No. 8 be disposed of? Describe the pit closure procedure and how the pit will be protected from water mixing with the sludge and oil.

5. Describe how you will plug and abandon the monitor wells inside the new pit.

6. Indicate which monitor wells, if any, surrounding the proposed pit area contain fluid. What is the depth to fluid for each monitor well? How often are the monitor wells checked for fluid? What is the reporting schedule?

If you have any questions or comments, feel free to contact me in Santa Fe at (505) 827-5884.

Sincerely,

JAMI BAILEY
Field Representative

JB:dp

cc: OCD - Hobbs

REED & ASSOCIATES, INC.

Request for administrative expansion RLL

May 28, 1986

Mr. Richard Stamets
Oil Conservation Division
Energy and Minerals Dept.
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Construction of Pit No. 7, Proposed Amendment to Permit and Construction of Cutoff Dike, Parabo, Inc.

Dear Mr. Stamets:

Parabo, Inc. has finished the construction of pit No. 7 as previously approved by the Oil Conservation Division. The attached Figure 1 shows the pit (in yellow) as it now exists. As you know, the South segment of the pit has been in use for some time. The entire pit will now be put into service as the need arises.

On March 19, 1986 our office conducted a final inspection of the dike around the Northern segment of pit No. 7. Prior inspections were made during the construction of the dike. The dike has been constructed in accordance with the design specifications as outlined in the permit. The dike is constructed to an elevation of 3450 feet. This elevation has been certified by a registered surveyor. This information is being furnished by Parabo, Inc.

Monitor wells 77 through 87 were constructed in 1984. Three of these wells have been damaged during mining operations and will be repaired or replaced as needed. MW-53, 64 through 67, and 77 through 87 will serve as monitoring wells for pit No. 7. However, MW-53, and 64 through 67 will eventually be abandoned as discussed later.

It is our opinion that the north segment of pit No. 7 is ready to accept salt water. The fluid level in the pit will be kept at a minimum of 3 feet below the top of the dike resulting in a maximum water surface elevation of 3447.

Construction of Cutoff Dike

A cut-off dike extending from the southeastern corner of pit No. 7

to the southeastern corner of pit No. 6 (see Figure 1) has been constructed. This was done after attempts to construct a similar dike along the eastern side of pit No. 6 to contain seepage under the dike in the vicinity of MW-64 was unsuccessful.

A final inspection of the cutoff dike was done on March 19, 1986. Inspections were also made during the construction of the dike. The dike was constructed in accordance with the same specifications as the other dikes. The elevation of the dike is 3450 feet which is the same as dikes H and I (see Figure 1).

Proposed Revisions

A few months ago Mr. Don McClain of Parabo, Inc. asked us to look into the possibility of constructing another pit or expanding pit No. 7 in the area between pit No. 6 and the now completed pit No. 7. With the construction of the seepage cutoff dike as described above, a large unutilized space would exist between the two pits. The proposed revisions would utilize this area thus significantly increasing the area available for salt water disposal. Pit No. 8, the existing mud pit, would eventually be closed and become a part of the new pit. Prior to this time pit No. 8 would be protected to prevent water from mixing with the sludge and oil that it contains. When a new mud pit is opened at a different location pit No. 8 would be allowed to dry out, the sludge removed and the pit covered with clean soil.

Several core borings and monitor wells have been drilled in the area that is involved in the proposed revision. Consequently, the Triassic surface is well defined (see Figure 1). The Triassic red clays in this area are similar in quality to those underlying the other evaporation pits.

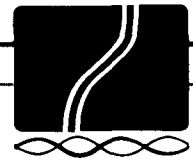
Based on the above data and information Parabo, Inc. is requesting that the existing permit be amended to include the revisions described herein. The proposed revisions for the construction and operation of the additional pit area are as follows:

1. Extend the northern leg of dike I westward and southwestward to join dikes G and H at the northwestern tip of pit No. 6 as shown on Figure 1. The southern boundary of the new pit would be the cut-off dike which has been constructed. The western and eastern boundaries would be dikes H and I.

2. The dike would be constructed to an elevation of 3450 feet which is the elevation of dike H, dike I and the cutoff dike. Other design criteria for the new dike will be the same as for previous dikes.

3. The water level in the pit will be kept at a minimum of 3 feet below the top of the dike resulting in a water surface elevation 3447 feet. A permanent gage will be installed in the pit to monitor the fluid level.

4. The additional pit would not require installation of any new monitoring wells. The existing monitor wells would provide adequate



protection. Existing monitor wells No. 53 and 64 through 67 would be plugged and abandoned since they would be inside the new pit.

Please contact me in our Midland office if you have any questions regarding this matter.

Very truly yours,

REED AND ASSOCIATES, INC.

Hugh B. Robotham

Hugh B. Robotham

cc: Mr. Don McClain
Parabo, Inc.
Eunice, N. M.

King Surveying

618 SOUTH TURNER • P. O. BOX 1246
PHONES: (505) 392-3074 - (505) 393-7316
HOBBS, NEW MEXICO 88240

NEAL D. KING
R.L.S., NEW MEXICO
AND ARIZONA
R.P.S., TEXAS

July 7, 1986

Mr. Paul Kautz
State of New Mexico
Oil Conservation Division
P. O. Box 1980
Hobbs, New Mexico 88240

Dear Sir:

The Dike on PARABO PIT "J" was completed on April 21, 1986. I measured the top of dike elevations, in your presence, on this date and all elevations were 3450 feet above sea level or higher.

Neal D. King P.L.S. No. 6541

cc: Don McClain - PARABO

NEAL D. KING
NEW MEXICO
6541
REGISTERED LAND SURVEYOR

3. Rule 7 of Order R-5516-A dated March 18, 1981, should be amended to provide that as to Pits Two, Three, and Five, and Pits Six, and Pit Seven as authorized under Order R-5516-B that the total quantity of water in such Pits from both natural precipitation and previous disposal may reach a plane three feet below the level of the spillpoint of the triassic redbeds or the core dike surrounding said Pits; thus permitting disposal to levels as follows:

Pit Two: 3459 feet above sea level,

Pit Three: 3459 feet above sea level,

Pit Five: 3447 feet above sea level,

Pit Six: 3447 feet above sea level,

Pit Seven: 3440 feet above sea level.

WHEREFORE, premises considered, petitioner prays that the Division amend Orders R-5516, R-5516-A and R-5516-B, in conformity with the allegations herein and authorizing further and continued operations under said Orders as amended.

Respectfully submitted,

LAW OFFICES OF R. E. RICHARDS, P.A.
Post Office Box 761
Hobbs, New Mexico 88241
(505) 393-7737
Attorney for Petitioner

Law Offices of
R. E. RICHARDS, P.A.

(505) 393-7737
414 North Turner
P. O. Box 761
Hobbs, New Mexico 88241

R. E. RICHARDS
WILLIAM C. FLEMING
OF COUNSEL

April 18, 1985

Richard L. Stamets, Director
New Mexico Energy and Minerals Department
Post Office Box 2088
Santa Fe, New Mexico 87501

Supplemental and Amended
Petition of Parabo, Inc.

Dear Dick:

Enclosed is the Supplemental and Amended Petition which we discussed.

Very truly yours,

LAW OFFICES OF R. E. RICHARDS, P. A.

R. E. RICHARDS

RER/da
enclosure

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF PARABO, INC., FOR AN ORDER AMENDING ORDERS R-5516, R-5516-A and R-5516-B.

SUPPLEMENTAL AND AMENDED PETITION

COMES NOW, Parabo, Inc., by and through its attorneys, the Law Offices of R. E. Richards, P. A., Post Office Box 761, Hobbs, New Mexico 88241, and moves the Division for an Order amending its original Petition as follows:

1. That paragraph 3 at the sixth line from the top of the second page, the word "three" should be deleted and the word "two" inserted.

2. That paragraph 3 at the indented material: Pit Five delete 3447 and insert 3448; Pit Six delete 3447 and insert 3448; and Pit Seven delete 3440 and insert 3441.

Respectfully submitted,

LAW OFFICES OF R. E. RICHARDS, P.A.
Post Office Box 761 (505) 3937737
Hobbs, NM 88241
Attorneys for Petitioner

Ed L. Reed and Associates, Inc.

Consulting Hydrologists

MIDLAND - CORPUS CHRISTI

TEXAS

ED L. REED, P.E.
CHAIRMAN OF THE BOARD

A. JOSEPH REED
PRESIDENT

CHESTER F. SKRABACZ
VICE PRESIDENT FIELD OPERATIONS

1109 N. BIG SPRING
MIDLAND, TEXAS 79701
915 682-0556

V. STEVE REED
EXECUTIVE VICE PRESIDENT

708 GUARANTY BANK PLAZA
CORPUS CHRISTI, TEXAS 78475
512-883-1353

October 30, 1984

Mr. Joe Ramey
Oil Conservation Division
Energy & Minerals Dept.
State of New Mexico
P.O. Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

On October 10, 1984 our office inspected the dike constructed for pond #7 at the Parabo, Inc. salt water disposal facility, and the dike been constructed according to specifications. Additionally, monitor holes 77 through 87 have been constructed in accordance with the design outlined in the permit. Also on October 10, 1984 monitor holes 77 through 87 were examined for fluids. Most of the holes were dry with the exception of monitor hole 79 and 80 which had small amounts of water in the bottom of the holes, but not enough to sample.

It is our opinion that pond #37 is ready to accept salt water. If you have any questions, please advise.

Very truly yours,

ED. L. REED & ASSOCIATES, INC.

V. Steve Reed

V. Steve Reed

VSR:ljs

cc: Mr. Don McLean, Parabo, Inc.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

December 27, 1982

Mr. R. E. Richards
Box 761
Hobbs, New Mexico 88240

Dear Mr. Richards:

Parabo is authorized to construct and dispose of water in an area shown as pit No. 7 in Mr. V. Steve Reed's letter and attached plat dated November 29, 1982.

A dike will be constructed around the pit to an elevation of 3443 feet and the maximum water level will be 3440 feet. Monitor wells will be constructed around the pit as outlined on the plat.

Please keep the Hobbs district office advised during construction so that periodic inspections can be made.

Yours very truly,

JOE D. RAMEY
Director

JDR/jc

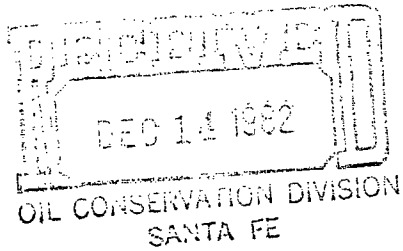
cc: File
Hobbs Office

Law Offices of
R. E. RICHARDS

(505) 393-7737
Broadway Plaza - Suite 12
215 West Broadway
P. O. Box 761
Hobbs, New Mexico 88240

R. E. RICHARDS
LAWRENCE D. HANNA

December 9, 1982



Mr. Joe D. Ramey, Director
Oil Conservation Commission
Post Office Box 2088
Santa Fe, NM 87501

Case No. 7497
Order No. R-6940
Applicant: Parabo, Inc.

Dear Joe:

I enclose herewith a letter under date of November 29, 1982 from V. Steve Reed along with an updated plat of the Parabo site.

You will note from the letter that Steve is recommending and we are requesting on behalf of our principal, Parabo, that you authorize, under the authority granted you in the most recent Order, the construction of proposed pit No. 7, all as more clearly shown in Steve's letter and on the plat attached thereto.

I ask that you review this matter and indicate to me your approval of the additional pit, which will of course be constructed in the same manner with the same quality of workmanship as has been done in the past with the same safeguards for OCD inspection prior to use.

With best personal wishes for the Holiday Season to you and your family, I remain

Very truly yours,

LAW OFFICES OF R. E. RICHARDS

R. E. RICHARDS

RER/af
enclosure
cc:
Mr. Ray Wallach

Ed L. Reed and Associates, Inc.

Consulting Hydrologists

MIDLAND · CORPUS CHRISTI

TEXAS

ED L. REED, P.E.
CHAIRMAN OF THE BOARD
A. JOSEPH REED
PRESIDENT
CHESTER F. SKRABACZ
VICE PRESIDENT FIELD OPERATIONS
1109 N. BIG SPRING
MIDLAND, TEXAS 79701
915 682-0556

V. STEVE REED
EXECUTIVE VICE PRESIDENT
OIL INDUSTRIES BLDG
SUITE 315
723 UPPER N. BROADWAY
CORPUS CHRISTI, TEXAS 78403
512-883-1353

November 29, 1982

Mr. Robert E. Richards
Attorneys At Law
P.O. Box 761
Hobbs, New Mexico 88240

Re: Proposed Expansion, Parabo, Inc.

Dear Bob,

Over the last year, the Wallachs have mined a considerable amount of sand and gravel from an area northeast of the Parabo, Inc. salt water disposal facility. This mining activity has exposed the Triassic red bed over an area encompassing approximately 6 acres. Parabo, Inc. proposes to construct a salt water evaporating pit in the area where the red bed has been exposed. This proposed pit, labeled pit #7 on the enclosed map will be constructed by building a dike around the entire perimeter. This area is one which we have previously tested drilled and found to be underlain by red clays similar in character to those underlying the other evaporation pits.

Parabo, Inc. proposes to construct pit #7 in the following manner:

1. A dike will be constructed completely around the perimeter of the gravel pit. This dike will be constructed to a sea level elevation of 3,443 feet. Dike construction will be in a manner similar to the construction of the previous dikes. You will note that an area labeled "deep pit", which is the area from which clay was removed to construct pond #6 has been deleted from proposed pit #7. Parabo is reserving this deep pit for possible future solids disposal.
2. The maximum water level elevation in pit #7 will be 3,440 feet, giving a freeboard of 3 feet. A permanent gauge will be constructed in pit #7 to measure the fluid level.
3. Eleven monitor holes will be constructed around the pit. These monitor holes will be drilled to a sea level elevation of 3,410 feet, which is 20 feet below the floor of the pond. Each monitor hole will be perforated from total depth to a sea level elevation of 3,440 feet.

4. Monitor holes #64, 65, and 66, which lie between pit #6 and pit #7 will be abandoned by plugging them with cement.
5. Prior to introducing brine to pit #7 a monitor hole completion report will be submitted to the Oil Conservation Division.

If you have any questions on this proposal, please call.

Very truly yours,

V. Steve Reed

V. Steve Reed

VSR:ljs
cc: Ray Wallach

Ed L. Reed and Associates, Inc.

Consulting Hydrologists

1109 N. BIG SPRING
MIDLAND, TEXAS 79701
915 682-0556

ED L. REED, P.E.
PRESIDENT
A. JOSEPH REED
EXECUTIVE VICE PRESIDENT
CHESTER F. SKRABACZ
VICE PRESIDENT FIELD OPERATIONS

V. STEVE REED
VICE PRESIDENT GEOLOGY
1909 SHERWOOD WAY
SAN ANGELO, TEXAS 76901
915 944-2120

November 6, 1981

Case 5899

Mr. Joe D. Ramey, Director
Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico

Re: Parabo, Inc.

Dear Joe:

Pursuant to our telephone conversation of this date, this will confirm our agreement to modify the dike around Pit No. 6 at Parabo, Inc., as requested in my letter of April 16, 1981 and authorized by your letter of July 17, 1981.

The dike has been constructed to an elevation of 3450'. The maximum fluid level will be maintained to an elevation of 3447'. The dike elevation is identical to the dike around Pit No. 5. Thus, a 3-foot freeboard will be maintained along both the Pit No. 5 dike and the new Pit No. 6 dike.

As we discussed in our telephone conversation, the previously proposed and approved dike elevation of 3453' has not been utilized because as we completed the cleaning of the bottom of the pit, we found that a 3447' fluid level was more than adequate. It is obvious that there has been a cost savings to Parabo but there has been no change in either the evaporation potential nor compromise of any of our prior design and safety standards.

Thank you for your usual hospitality, consideration and cooperation.

Very truly yours,

V. Steve Reed

V. Steve Reed

VSR/da

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

July 17, 1981

Mr. R. E. Richards
Attorney at Law
Box 761
Hobbs, New Mexico 88240

Gulf 4879

Dear Mr. Richards:

As requested by Mr. Steve Reed's letter of April 16, 1981, and as authorized by Commission Order No. R-5516, Parabo is authorized to add an additional evaporation pit (Pit 6) at their facility east of Eunice, New Mexico.

The pit is to be constructed and monitor wells drilled as outlined in the above mentioned letter.

Please contact the Hobbs District Office prior to any dike construction.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Ed L. Reed and Associates, Inc.

Consulting Hydrologists

MIDLAND · CORPUS CHRISTI

TEXAS

ED L. REED, P.E.
PRESIDENT
A. JOSEPH REED
EXECUTIVE VICE PRESIDENT
CHESTER F. SKRABACZ
VICE PRESIDENT FIELD OPERATIONS
1109 N. BIG SPRING
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V. STEVE REED
VICE PRESIDENT GEOLOGY
OIL INDUSTRIES BLDG.
SUITE 315
723 UPPER N. BROADWAY
CORPUS CHRISTI, TEXAS 78403
512-883-1353

July 14, 1981

Mr. Joe Ramey, Director
State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Dear Joe:

Enclosed are copies of the three cross sections which should have accompanied my April 16, letter concerning Parabo expansion. The locations of the cross sections are shown on the map that was included with the letter.

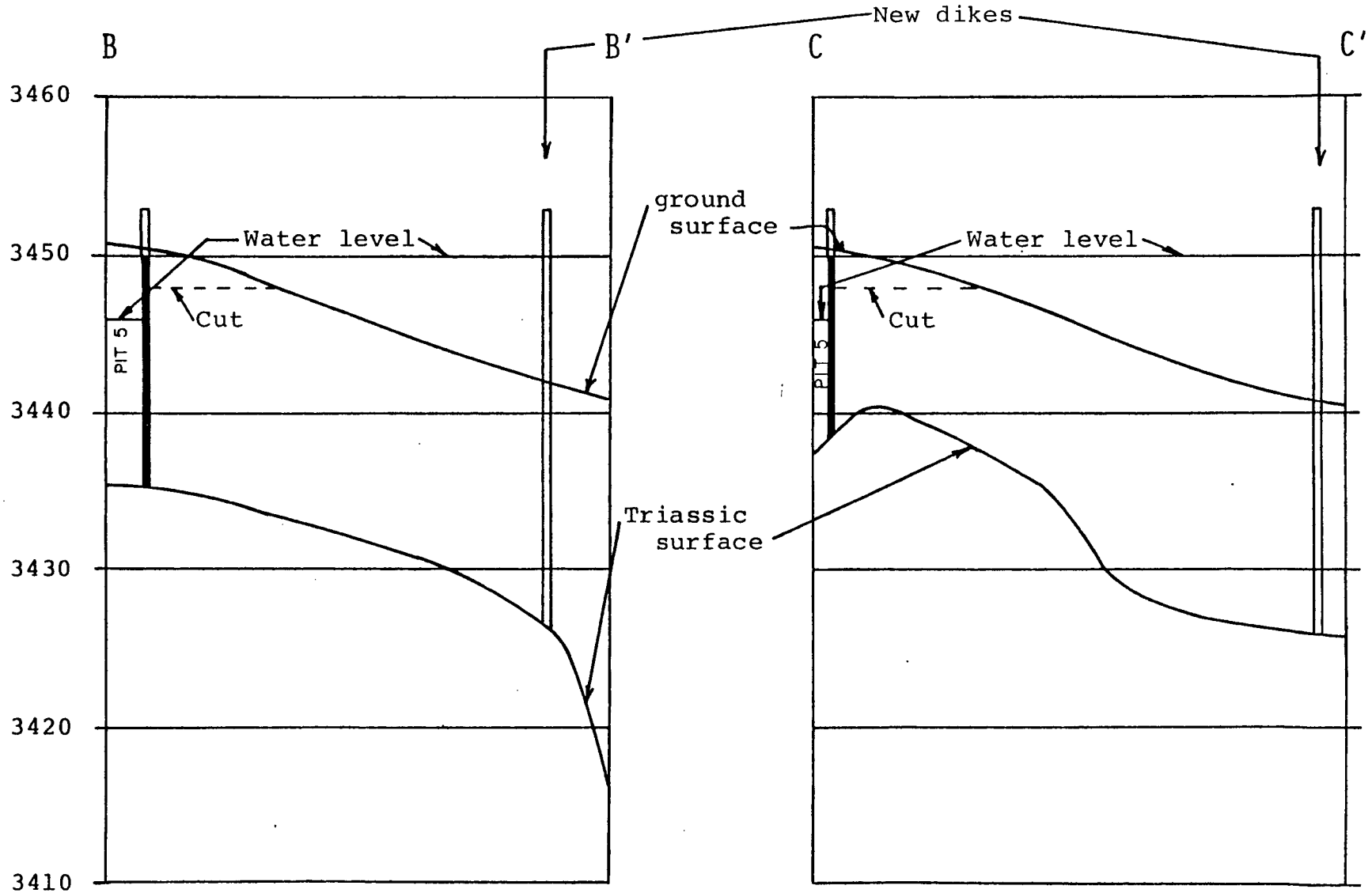
Very truly yours,

V. Steve Reed

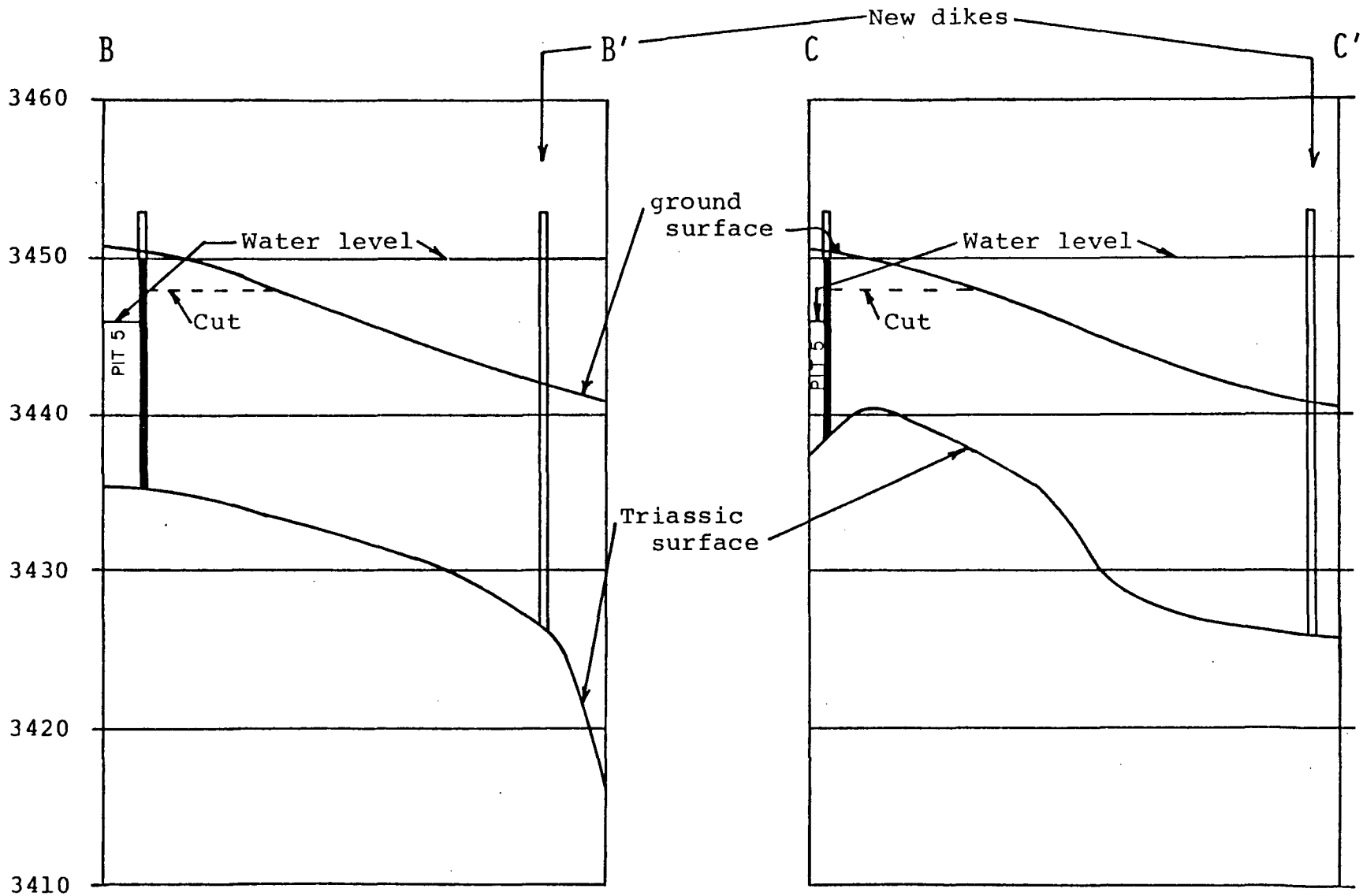
dp

Enclosures

Copy: Mr. R. E. Richards
P.O. Box 761
Hobbs, New Mexico 88240



Ed L. Reed & Assoc. Inc
Consulting Hydrologists
Midland, Corpus Christi, Texas



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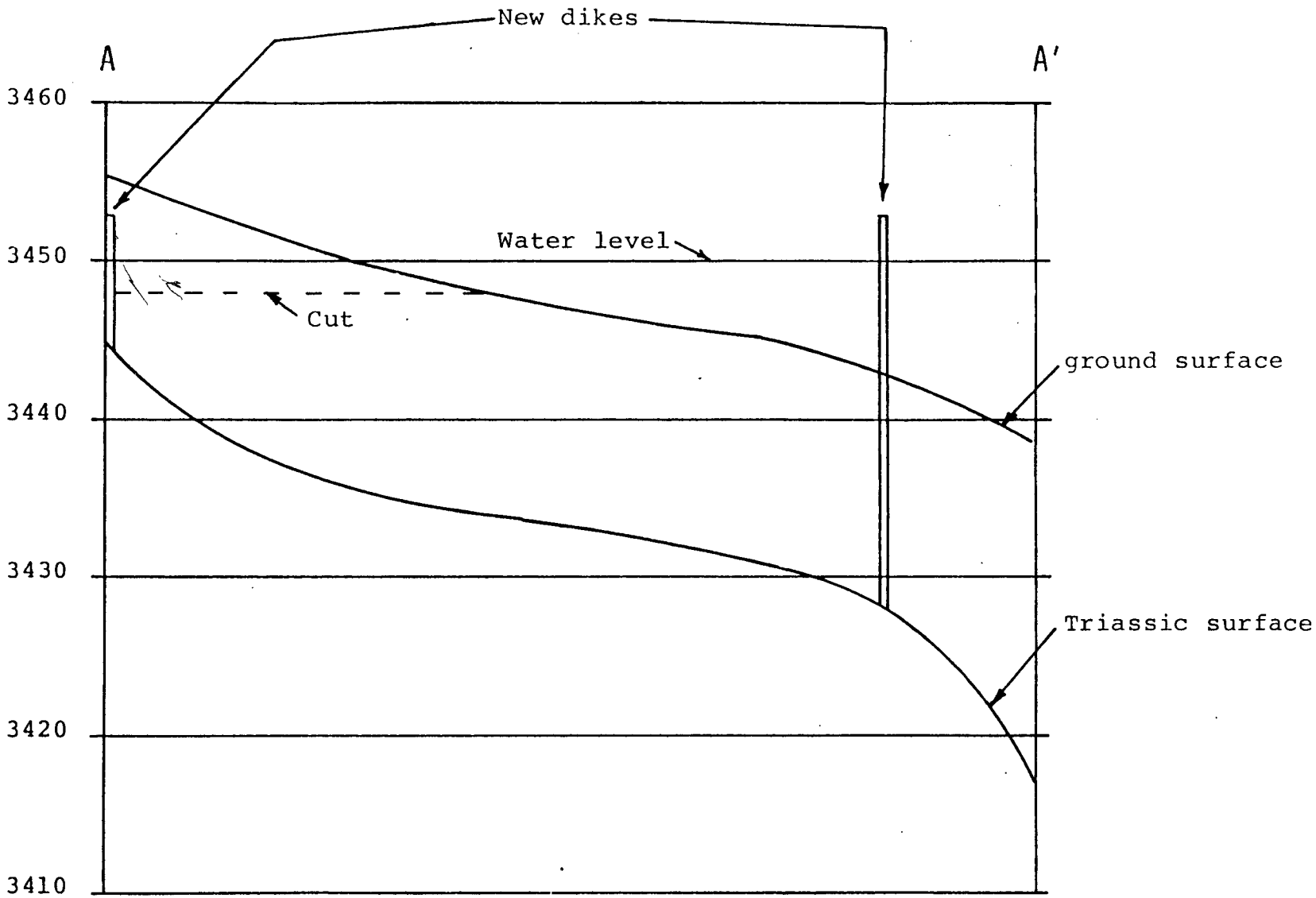
Consulting Hydrologists
Midland, Corpus Christi, Texas



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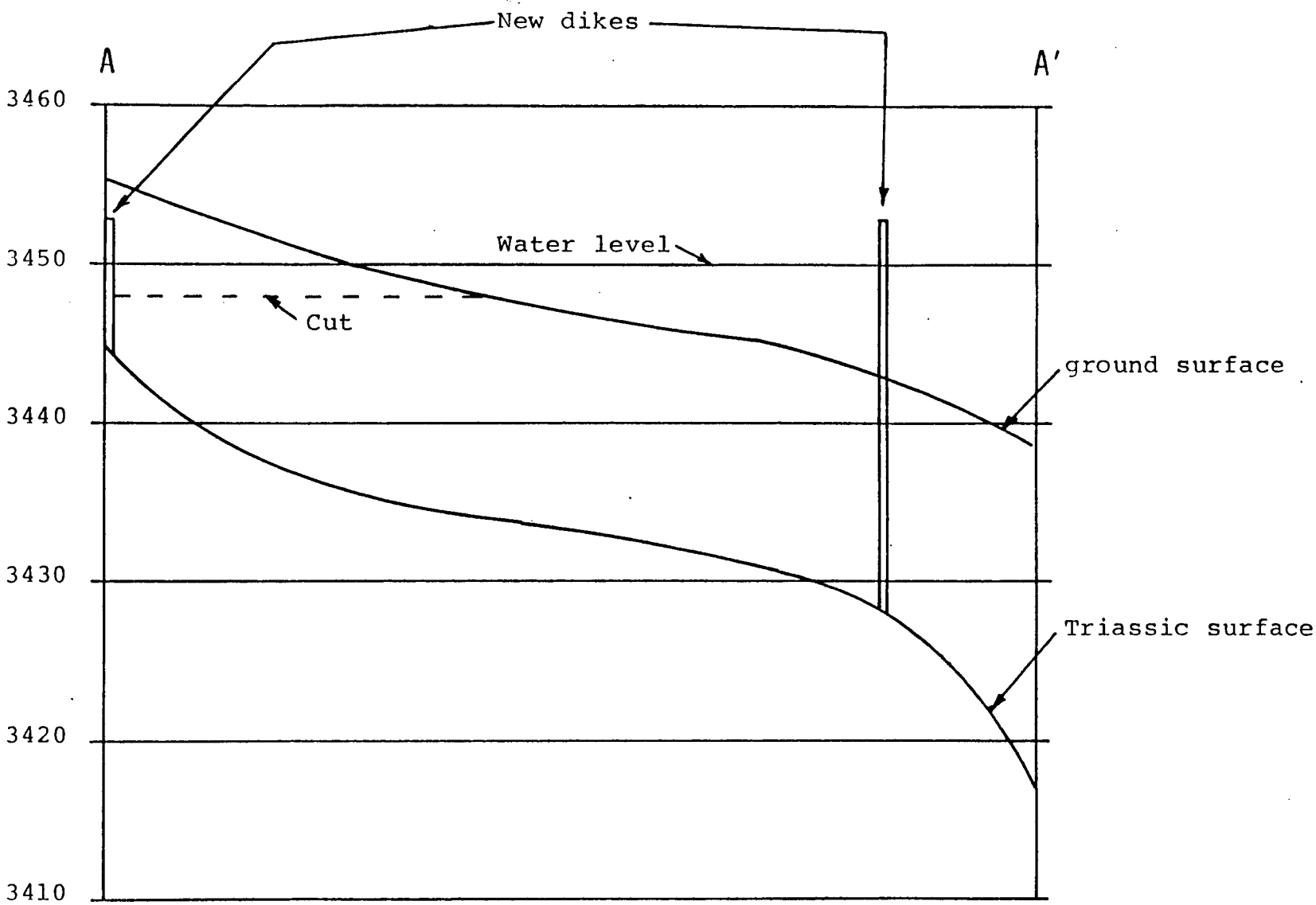
Consulting Hydrologists
Midland, Corpus Christi, Texas



Ed L. Reed & Assoc. Inc
Consulting Hydrologists
Midland, Corpus Christi, Texas

Ed L. Reed and Associates, Inc.

Consulting Hydrologists

MIDLAND · CORPUS CHRISTI

TEXAS

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1109 N. BIG SPRING
MIDLAND, TEXAS 79701
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V. STEVE REED
VICE PRESIDENT GEOLOGY

OIL INDUSTRIES BLDG.
SUITE 315
723 UPPER N. BROADWAY
CORPUS CHRISTI, TEXAS 78403
512-883-1353

April 16, 1981

Mr. R. E. Richards
Attorney at Law
P.O. Box 761
Hobbs, New Mexico 88240

Re: Parabo expansion

Dear Bob:

I have recently test drilled an area south and east of Pit #5 to evaluate its potential for constructing salt water evaporation pits. I find that an evaporating pit consisting of about 18 surface acres can be constructed as shown on the enclosed maps. This pit would be completed by constructing a combination core trench/dike from the north end of Dike "G" to about 200 feet east of Dike "B". Both ends of the dike would be tied into Dike "G". This core trench/dike would be constructed by cutting a trench at least 15 feet wide through the overburden into the underlying Triassic clay. This trench would be filled with compacted clay to the ground surface, and a free-standing dike would be continued to an elevation of 3453 feet. Dike "G" which now has an elevation of 3450 feet would be raised to an elevation of 3453 feet. I have constructed three cross-sections in the proposed expansion area showing the configuration of the surface topography, the existing dike and new structure. The material lying on top of the redbed has no economic value, therefore, it is proposed that this material would be left in place where it lies below an elevation of 3448 feet. That material which lies above 3448 feet would be excavated. I propose to maintain the fluid level at a maximum elevation of 3450 feet, providing a 3-foot freeboard.

As can be seen from the cross-sections, the southern side of the core trench/dike is as high as 27 feet. With a 3-foot freeboard the maximum height impounding water is 24 feet. Over half of this structure would be completed below ground level with a maximum exposed dike of 12 feet, three feet of which are for freeboard. Thus, even though the core trench/dike is quite high on the south side, there should be no problems with its structural integrity.

Due to the height of the proposed structure, I have calculated the time which one could expect salt water to leak through the base of the core trench at its deepest point where the pressures are the highest. The velocity of movement through the structure is calculated using the formula as follows.

$$V = \frac{PI}{7.48\ Sy}$$

where

V = Velocity in feet per day

P = Permeability in gallons per day per square foot

I = The hydraulic gradient. The hydraulic gradient is the height of the water divided by the thickness of the dike.

Sy = Specific yield, or effective porosity. The effective porosity of a clay ranges from 1 to 10 percent. The velocity calculations use a conservative 2 percent effective porosity.

Using a permeability of 1×10^{-8} cm/sec (2.12×10^{-4} gpd/ft^2),

$$V = \frac{2.12 \times 10^{-4}\ \text{gpd/ft}^2 \times 24/15}{7.48 \times .02} = .0023\ \text{ft/day}$$

Therefore, a 15-foot thick dike would not begin to leak at its lowest point (24 feet below the water level) until there had been continual impoundment for 6500 days or almost 18 years. I consider the 18 years to be a minimum time period and thus consider the structure capable of adequate impoundment. Assuming the structure did begin to leak after 18 years, the total leakage along the 1100 foot long south side of the core trench would be 0.4 gallons per day along the basal one foot of structure.

Prior to placing this new pit in operation, 13 monitoring wells should be drilled as shown in the enclosed figures. These monitoring wells would be drilled to an elevation of 3410 feet and the casing perforated from total depth to an elevation of 3450 feet or within 5 feet of the surface of the ground. This expansion would also involve abandoning monitor holes 2, 3, and 4 and 54 through 61.

Maintenance of the pit and monitoring will be in accordance with the order.

Very truly yours,

V. Steve Reed

V. Steve Reed

VSR:vjr

cc: Parabo

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

3 March 1982

EXAMINER HEARING

IN THE MATTER OF:

Application of Parabo, Inc. for an oil treatment plant permit, Lea County, New Mexico. CASE 7497

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: R. E. Richards, Esq.
119 North Dalmont
Hobbs, New Mexico 88240

WIND SPEED = U_A = 50 MPH

FETCH = F = 500 ft.

DEPTH OF WATER = D = 5 ft

FROM SHORE PROTECTION MANUAL, PG. 3-56, FIG 3-27(a)

WAVE HEIGHT = H = 0.5 ft

PERIOD = T = 0.9 sec.

FIND BREAKING WAVE HEIGHT, H_b,

FROM FIG 7-3 PG. 7-7

$$\frac{H}{gT^2} = \frac{0.5}{32.2(0.9)^2} = .0192$$

THUS $\frac{H_b}{H} = 1.0$ FOR 1:10 SLOPE

$H_b = H = 0.5$ ft

$$\frac{H_b}{gT^2} = \frac{H}{gT^2} = .0192$$

FROM FIG. 7-2 PG. 7-6 USING A SLOPE OF 1:10

$\alpha \approx 1.6$

$\beta = \frac{d_B}{H_B} = 1.05$

$d_{B\,max} = \alpha H_B = 1.6(0.5) = 0.8$

$d_{B\,MIN} = \beta H_B = 1.05(0.5) = 0.53$

∴ THUS WHEN A SLOPE OF 1:10 BREAKING COULD OCCUR WITH A DEPTH OF DEPTH BETWEEN 0.53 - 0.8 ft.

OUR DEPTH IS 8' SO ASSUME NON-BREAKING WAVE.

NOW FIND NON-BREAKING WAVE FORCE & MOMENTS ASSUMING A VERTICAL WALL

USE METHODS DESCRIBED ON PG. 7-161
ASSUME SMOOTH WALL $\chi = 1.0$

$H_i = H = 0.5$ ft
$d = 8$ ft
$T = 0.9$ s

$$\frac{H_i}{d} = \frac{0.5}{8} = 0.0625$$

$$\frac{H_i}{gT^2} = \frac{0.5}{(32.2)(0.9)^2} = .0192$$

FROM FIG. 7-90 FOR $H_i/gT^2 = .0192$

$$\frac{h_o}{H_i} \approx 0.21$$

$$h_o = 0.21\, H_i = 0.21\,(0.5) = 0.105 \text{ ft}$$

FROM EQS. 7-73 & 7-74 ON PG. 7-161 AND FIG. 7-88 ON PG. 7-162

$$\eta_c = d + h_o + \left(\frac{1+\chi}{2}\right) H_i \qquad (7\text{-}73)$$

$$\eta_c = 8 + 0.105 + \left(\frac{1+1}{2}\right) 0.5$$

$$\eta_c = 8.6 \text{ ft}$$

$$\eta_t = d + h_o - \left(\frac{1+\chi}{2}\right) H_i$$

$$\eta_t = 8 + 0.105 - \left(\frac{1+1}{2}\right) 0.5$$

$$\eta_t = 7.6 \text{ ft}$$

∴ THE WALL HAS TO BE ABOUT 8.6 ft TO PREVENT OVERTOPPING (WE ARE O.K.)

FROM FIG 7-91 ON PG. 7-165, THE DIM.-LESS FORCE IS FOUND TO BE (AT WAVE CREST)

$$\frac{F_c}{w d^2} = .001$$

$$F_c = .001\, w d^2 = .001 \left(66.8 \tfrac{lb}{ft^3}\right)(8 ft)^2$$

$$F_c = 4.2 \text{ lb/ft}$$

∴ HYDRODYNAMIC FORCES ARE NEGLIGIBLE

THE AVE. STATIC PRESSURE ON THE WALL IS

$$F_H = \frac{1}{2} H w = \frac{1}{2}(8\text{ft})\left(66.8 \frac{lb}{ft^3}\right) = 267\ lb/ft^2$$

or per linear ft

$$F_H = 267\ (8\text{ ft}) = 2138\ lb/ft$$

COMPARING THIS TO THE SHEARING FORCES (F_S) CALCULATED BY ED REED & ASSOC.
(FRICTION FACTOR OF 0.4 O.K.)

$F_S = 12{,}055$

$$\text{SAFETY FACTOR} = \frac{F_S}{F_H} = \frac{12{,}055}{2138} = 5.64$$

MY CALCULATIONS CONCUR.

THE REPRODUCTION OF

THE

FOLLOWING

DOCUMENT (S)

CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

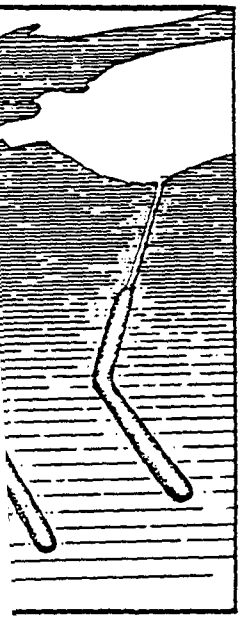
THE ORIGINAL

SHORE PROTECTION MANUAL

VOLUME I

Coastal Engineering Research Center

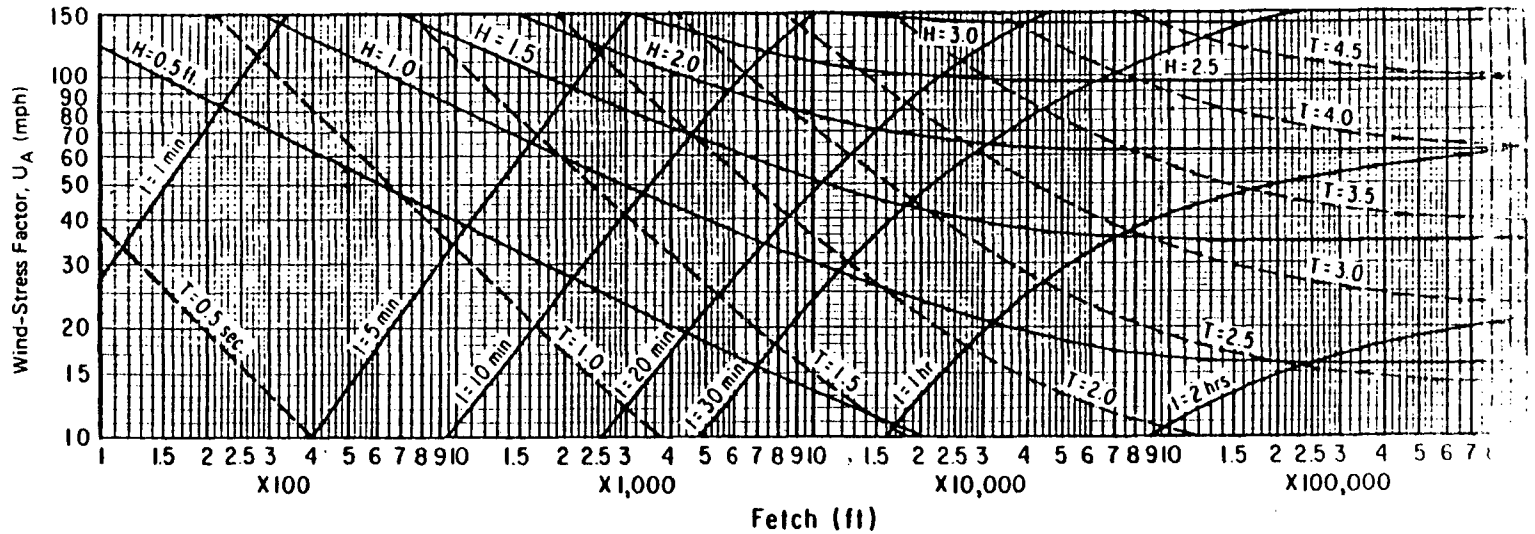
DEPARTMENT OF THE ARMY
Waterways Experiment Station, Corps of Engineers
PO Box 631
Vicksburg, Mississippi 39180



1984

Prepared for
DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Washington, DC

Note: Waves in a water depth of 5 feet with wave periods less than 1.4 secs. are considered to be deepwater waves, i.e. $^{d}/_{T^2} > 2.56$.



Note: Waves in a water depth of 1.5 meters with wave periods less than 1.4 seconds are considered to be deepwater waves, i.e., $^{d}/_{T^2} > 0.78$.

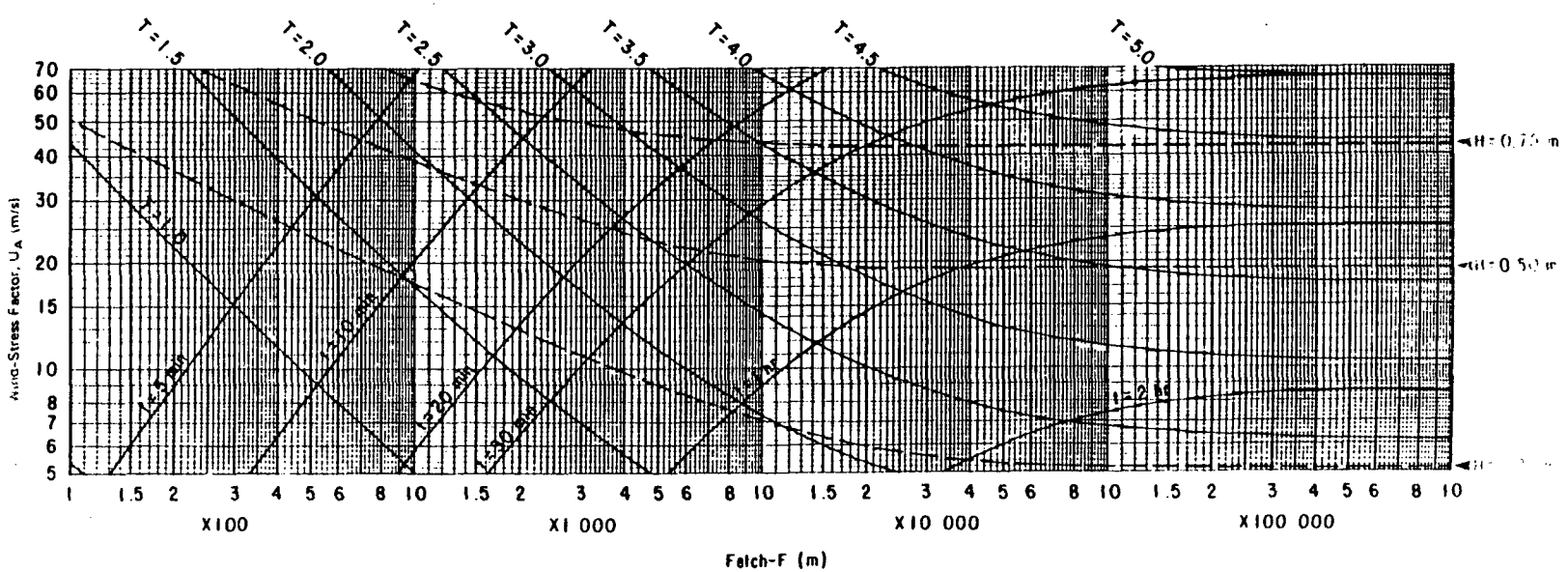


Figure 3-27. Forecasting curves for shallow-water waves; constant depths = 5 feet (upper graph) and 1.5 meters (lower graph).

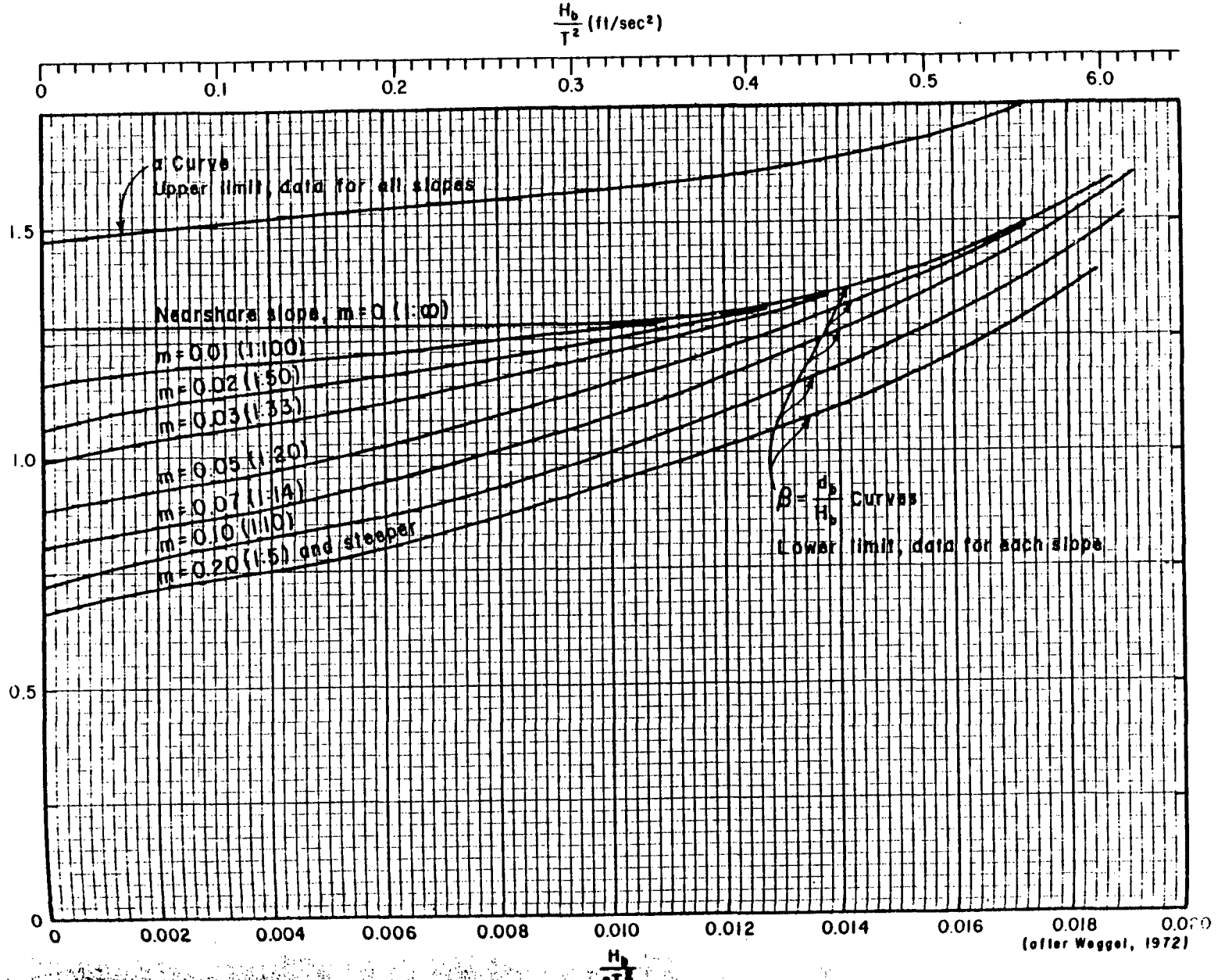


Figure 3-8. α and β versus H/gT^2.

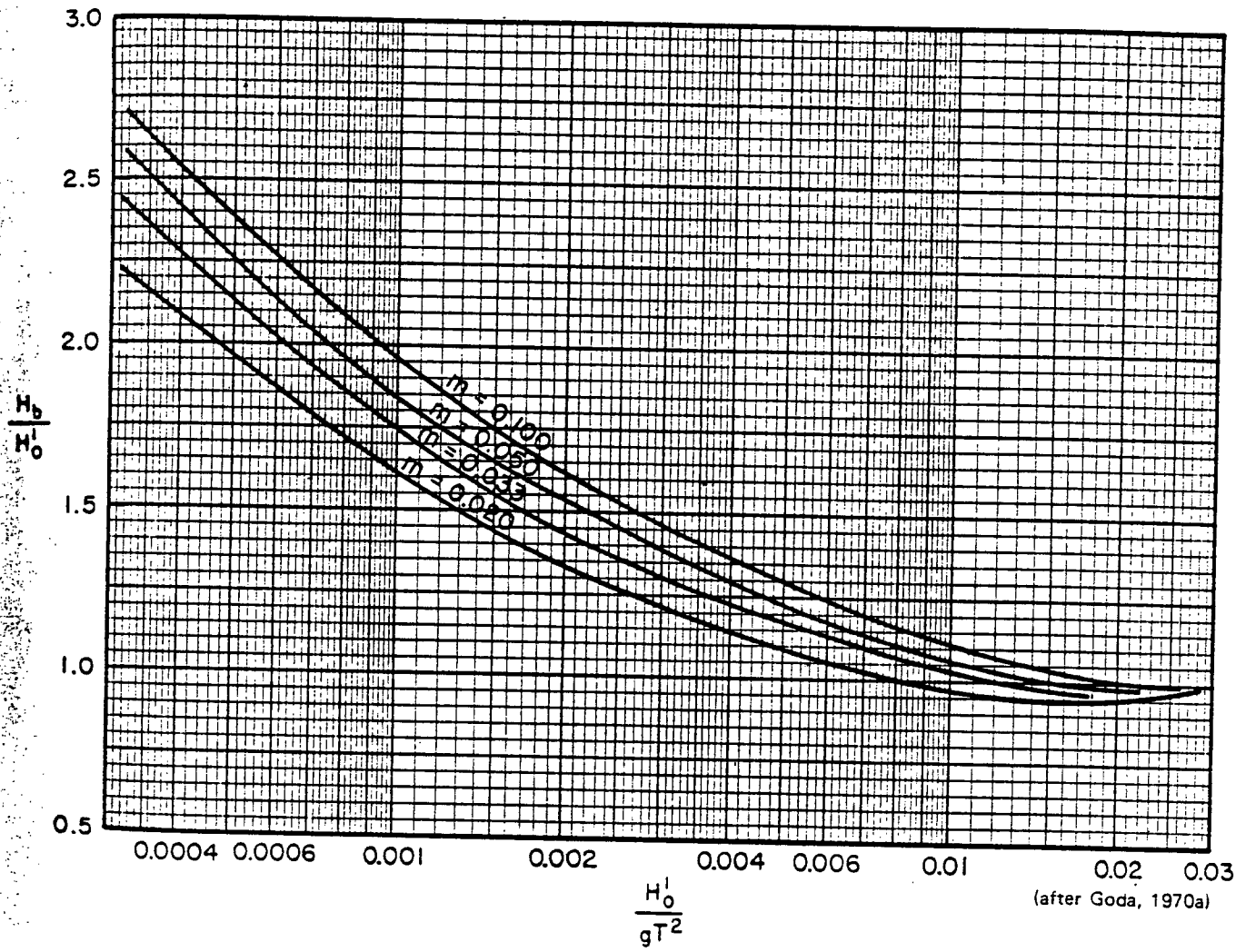


Figure 7-3. Breaker height index H_b/H_o' versus deepwater wave steepness H_o'/gT^2 .

2. Nonbreaking Wave Forces on Walls.

[illegible] of wave forces on structures, a distinction [illegible] between the action of nonbreaking, or plunging, and broken waves [illegible] selection of Design Wave. Forces due to nonbreaking waves are primarily hydrostatic. Broken and breaking waves exert an additional force due to the dynamic effects of turbulent water and the compression of entrapped air pockets. Dynamic forces may be much greater than hydrostatic forces; therefore, structures located where waves break are designed for greater forces than those exposed only to nonbreaking waves.

b. Nonbreaking Waves. Typically, shore structures are located in depths where waves will break against them. However, in protected regions, or where the fetch is limited, and when depth at the structure is greater than about 1.5 times the maximum expected wave height, nonbreaking waves may occur.

Sainflou (1928) proposed a method for determining the pressure due to nonbreaking waves. The advantage of his method has been ease of application, since the resulting pressure distribution may be reasonably approximated by a straight line. Experimental observations by Rundgren (1958) have indicated Saniflou's method overestimates the nonbreaking wave force for steep waves. The higher order theory by Miche (1944), as modified by Rundgren (1958), to consider the wave reflection coefficient of the structure, appears to best fit experimentally measured forces on vertical walls for steep waves, while Sainflou's theory gives better results for long waves of low steepness. Design curves presented here have been developed from the Miche-Rundgren equations and the Sainflou equations.

c. Miche-Rundgren: Nonbreaking Wave Forces. Wave conditions at a structure and seaward of a structure (when no reflected waves are shown) are depicted in Figure 7-88. The wave height that would exist at the structure if the structure were not present is the incident wave height H_i. The wave height that actually exists at the structure is the sum of H_i and the height of the wave reflected by the structure H_r. The wave reflection coefficient χ equals H_r/H_i. Wave height at the wall H_w is given as

$$H_w = H_i + H_r = (1 + \chi) H_i \tag{7-72}$$

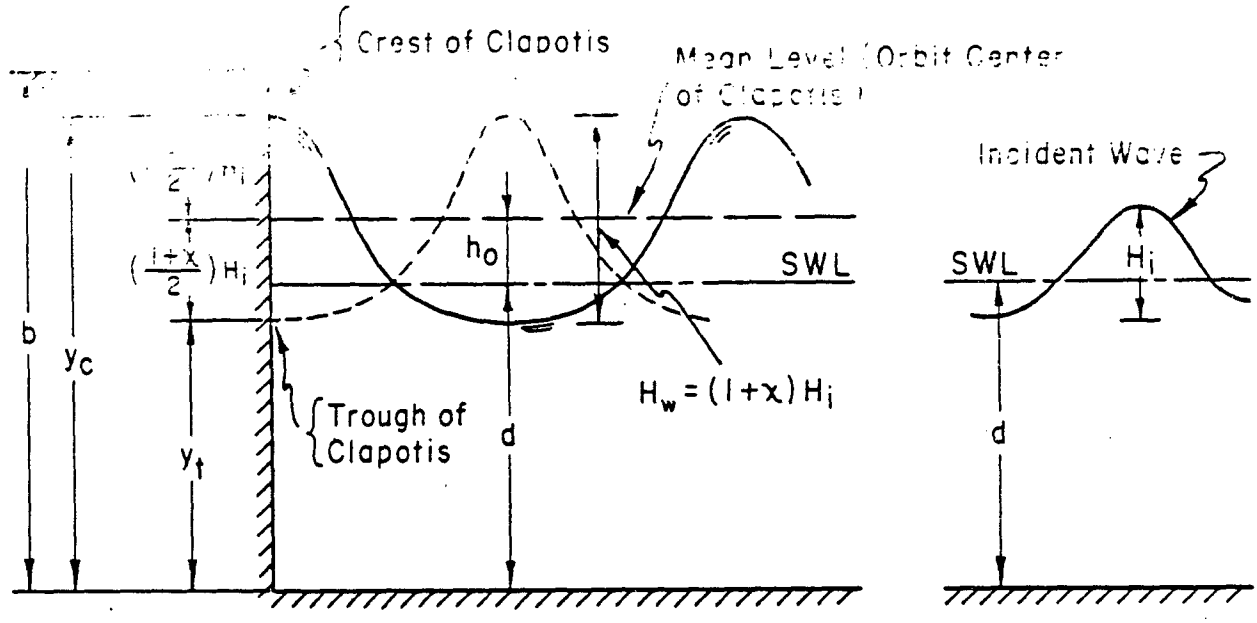
If reflection is complete and the reflected wave has the same amplitude as the incident wave, then $\chi = 1$ and the height of the *clapotis* or *standing wave* at the structure will be $2H_i$. (See Figure 7-88 for definition of terms associated with a clapotis at a vertical wall.) The height of the clapotis crest above the bottom is given by

$$y_c = d + h_o + \frac{1 + \chi}{2} H_i \tag{7-73}$$

where h_o is the height of the clapotis orbit center above SWL.

The [illegible] the clapotis trough above the bottom is given by

[illegible] (7-74)



d = Depth from Stillwater Level

H_i = Height of Original Free Wave (In Water of Depth, d)

χ = Wave Reflection Coefficient

h_o = Height of Clapotis Orbit Center (Mean Water Level at Wall) Above the Stillwater Level (See Figures 7-90 and 7-93)

y_c = Depth from Clapotis Crest = $d + h_o + \left(\frac{1+\chi}{2}\right) H_i$

y_t = Depth from Clapotis Trough = $d + h_o - \left(\frac{1+\chi}{2}\right) H_i$

b = Height of Wall

Figure 7-88. Definition of Terms: nonbreaking wave forces.

The reflection coefficient, and consequently clapotis ~~height~~ and wave force, depends on the geometry and roughness of the reflecting wall and possibly on wave steepness and the "wave height-to-water depth" ratio. Domzig (1955) and Greslou and Mahe (1954) have shown that the reflection coefficient decreases with both increasing wave steepness and "wave height-to-water depth" ratio. Goda and Abe (1968) indicate that for reflection from smooth vertical walls this effect may be due to measurement techniques and could be only an apparent effect. Until additional research is available, it should be assumed that smooth vertical walls completely reflect incident waves and $\chi = 1$. Where wales, tiebacks, or other structural elements increase the surface roughness of the wall by retarding vertical motion of the water, a lower value of χ may be used. A lower value of χ also may be assumed when the wall is built on a rubble base or when rubble has been placed seaward of the structure [illegible] should not be used [illegible]

[illegible] wall are shown in Figure 7-89. When the crest is at the wall, pressure

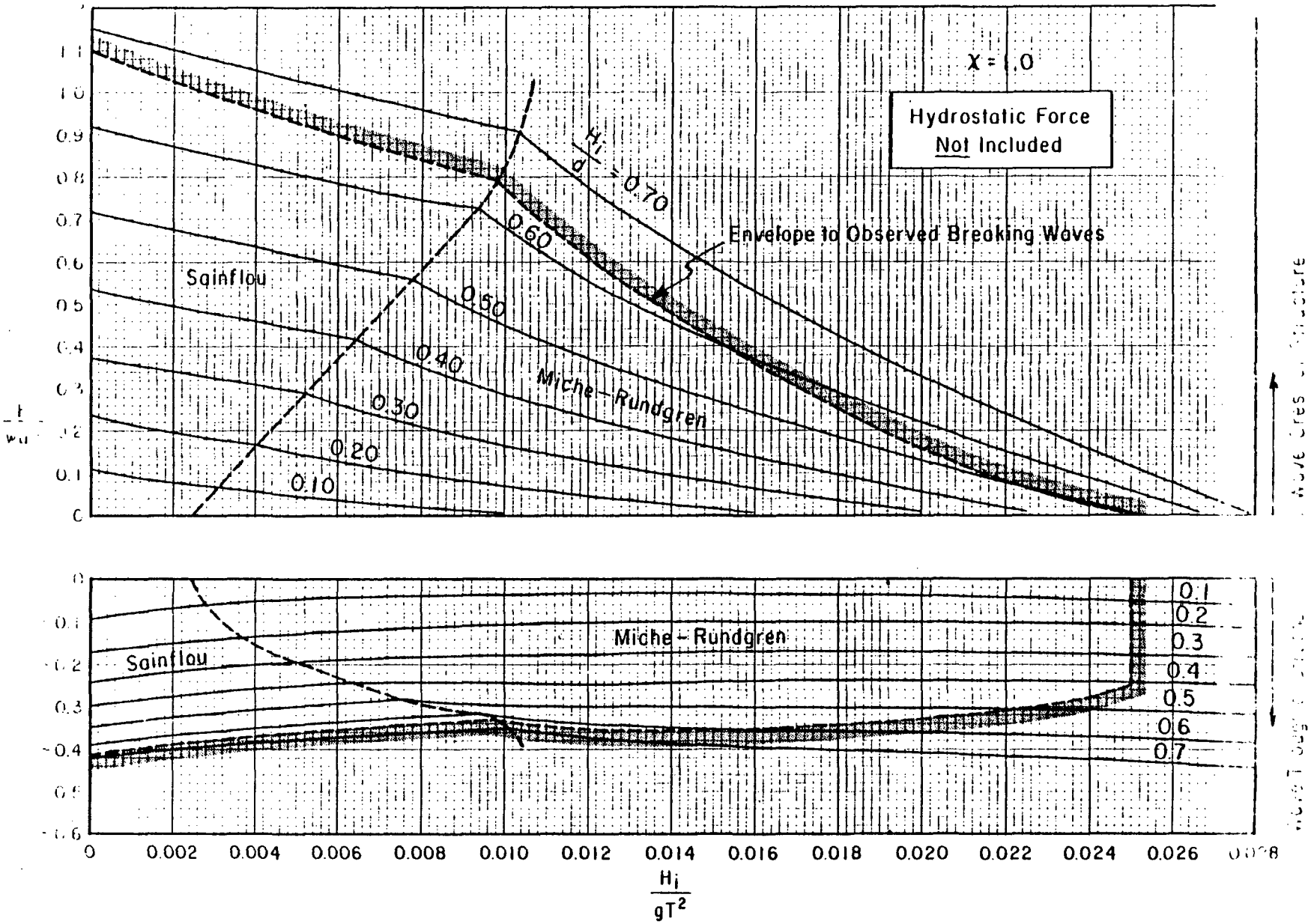


Figure 7-91. Nonbreaking wave forces; $\chi = 1.0$.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR

R. E. RICHARDS
Attorney At Law

Law Offices of
R. E. RICHARDS
(505) 393-7737

Broadway Plaza - Suite 12
215 West Broadway
P. O. Box 761
Hobbs, New Mexico 88240

☐ Telephone ☒ Personal

Time
11 AM

11/4/85

Originating Party	Other Parties
R.E. Richards, John Rengrom / ATTORNEYS FOR PARABO	Dave Boyer, Dick Stamets / OCD

Subject: Update & Initial Discussion on PARABO Need For more space

Discussion: Unichem has bought stock & Now owns PARABO Pits close to being "Full" due to abnormal rainfall plus more salt wates from operators (more produced than anticipated). "Full" is allowed operating volume - 4' on sides, 3' freeboard on interior. PARABO seeks guidance on alternatives - want to know if there are to be environmental hassels. ① If reduce freeboard on 40 acres, This adds 310,000 bbls. If have 3000 bbl/acre/yr (annualized vol), this gives 2.6 yrs additional time. ② Disposal well - will have to treat to remove oil & sediment may be expensive ③ More pits - Can construct after approval ④ Can go out of business!

Conclusions or Agreements

From OCD To Parabo: No environmental hassels if safe operation - present engineering analysis justifying freeboard reduction. This will give time to investigate other alternatives & have approval. | Reduced freeboard stopgap only.

Distribution: Parabo Case File # 5899

Signed
D J Boyer

* other engineering that may need to be done includes evaporation & storm discharge

Law Offices of
R. E. RICHARDS, P.A.

R. E. RICHARDS

(505) 393-7737
414 North Turner
P. O. Box 761
Hobbs, New Mexico 88241

Set for April 24 Hearing

Case 8582

January 18, 1985

RECEIVED
JAN 2 1985
OIL CONSERVATION DIVISION

Richard L. Stamets, Director
New Mexico Energy and Minerals Department
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Application of Parabo, Inc.

Dear Dick:

Enclosed is Petition of Parabo, Inc., for amendment to Orders R-5516, R-5516-A, and R-5516-B. Per my telephone advice, I am delivering an endorsed copy of this Petition to Jerry Sexton.

Respectfully submitted,

R. E. RICHARDS

RER/p
Enclosure

cc w/encl:

Jerry Sexton, Supervisor
Energy and Minerals Department
Post Office Box 1980
Hobbs, New Mexico 88241

Mr. Richard Brakey
Parabo, Inc.
1901 Main Street
Eunice, New Mexico 88231

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF PARABO, INC., FOR AN ORDER AMENDING ORDERS R-5516, R-5516-A and R-5516-B

P E T I T I O N

COMES NOW, Parabo, Inc., by and through its attorneys, Law Offices of R. E. Richards, P.A., Post Office Box 761, Hobbs, New Mexico, 88241, and moves the Division for an Order amending Orders Numbers R-5516, R-5516-A and R-5516-B, and in support thereof states:

1. Applicant has been, under the above described Orders, operating a facility as described in those Orders whereby it commercially disposed of and does dispose of brinewater and other fluids generated in the drilling for and production of oil, gas, and other minerals.

2. That certain changes and amendments should be made in and to those Orders to more adequately reflect the Division's desires for the operation of said facility and to approve and authorize certain modifications because of desired and contemplated growth and expansion of said facility, and because of additional information gathered in the operation of said facility relating to certain freeboard requirements.

I N D E X

E X H I B I T S

MR. NUTTER: We'll call next Case Number 7497.

MR. PEARCE: Application of Parabo, Inc. for an oil treatment plant permit, Lea County, New Mexico.

MR. RICHARDS: May it please the Commission, I'm R. E. Richards, Attorney at Law, Hobbs, New Mexico. I represent the applicant and I have one witness who needs to be sworn.

(Witness sworn.)

ROBERT WALLACH

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. RICHARDS:

Q. May it please the Hearing Examiner?

MR. NUTTER: Yes, sir.

Q. Mr. Wallach, I hand you what's been marked for identification as Exhibit Number One. Can you tell the Commission -- the Examiner what that is?

A. It's my direct testimony on the proposal of a treatment plant.

Q. Do you have any additions, deletions, or corrections you wish to make to that testimony?

A. Yes, sir. I would like to add the location of the plant as being on the southwest quarter of Section 29, Township 21 South, Range 38 East.

Q. Is that in Lea County, New Mexico?

A. Lea County, New Mexico.

Q. Is it also the site of a salt water -- a previously permitted salt water disposal operation?

A. Yes, sir, it is.

Q. Do you have any other additions or corrections?

A. No, sir.

MR. RICHARDS: May it please the Hearing Examiner, I move the introduction of Exhibit One as Mr. Wallach's direct testimony, and tender the witness for cross examination.

MR. NUTTER: Haven't had time to read his direct yet.

You said that the location was the southwest quarter of Section 29. I believe the application was for the southeast quarter of Section 29.

MR. RICHARDS: That may well be my error, Mr. Nutter, and I will plead guilty if it is.

MR. NUTTER: No, the application says the southwest quarter.

The docket says the southeast quarter.

MR. RICHARDS: As far as I know, the southwest quarter is correct.

MR. NUTTER: Southwest quarter, yeah, we'd better check the ad.

The docket may have the error; the ad may be correct.

MR. RICHARDS: The fact of the matter, Mr. Nutter, and on the record, the entire section is owned by the applicant or affiliated interests herein.

MR. NUTTER: Right, I realize they own quite a bit of land right around that.

MR. RICHARDS: Yes, sir.

MR. NUTTER: Yeah, the ad for this case was the southeast. That error was in the ad for the case. We will have to continue the case and readvertise it and will hold any order until such time.

In the meantime, Mr. Wallach, we may have some questions on this direct testimony. If we do, we'll get in touch with you.

A. Okay.

MR. NUTTER: For explanation and how

you're going to be reporting some of this recovered oil.

A. Yes, sir.

MR. NUTTER: And so forth.

And in the meantime, we will take the case under advisement and we'll readvertise it. We will readvertise the case for March 31st.

MR. RICHARDS: Mr. Hearing Examiner --

MR. NUTTER: For the location of the proposed treating plant.

MR. RICHARDS: Mr. Hearing Examiner, in light of the fact it will need to be readvertised, I'd like to ask that notice be required of any intent to protest or intervene, and that absent any protest, that the attorney and the representative of the applicant attendance be waived.

MR. NUTTER: Well, in the event someone should come in and protest it, we would continue it to such time as you would be notified of the hearing.

MR. RICHARDS: If that's satisfactory, I would appreciate it.

MR. NUTTER: Right. I doubt if anyone will show up if they didn't show up today, but just for procedure sake, we'll have to reopen the case.

MR. RICHARDS: Yes, sir.

MR. NUTTER: Your attendance here will

not be necessary that date, and if opposition appears, we'll make them wait until you've shown up.

MR. RICHARDS: All right. Thank you. May we be excused?

MR. NUTTER: With that, we'll take the case -- we've continued the case till March the 31st for readvertising and you may be excused.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7497, heard by me on 3/3 1982.

, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

April 15, 1982

Mr. R. E. Richards
Attorney at Law
P. O. Box 761
Hobbs, New Mexico 88240

Re: CASE NO. 7497
ORDER NO. R-6940

Applicant:

Parabo, Inc.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other

BEFORE THE ENERGY AND MINERALS DEPARTMENT,
OIL CONSERVATION DIVISION OF THE STATE OF NEW MEXICO

APPLICATION OF PARABO, INC.
FOR A TREATING PLANT PERMIT. DOCKET NO. 7497

DIRECT TESTIMONY

of

ROBERT RAY WALLACH

LAW OFFICES OF R. E. RICHARDS
Post Office Box 761
Hobbs, New Mexico 88240
ATTORNEYS FOR APPLICANT.

EXH 1

DIRECT TESTIMONY OF ROBERT RAY WALLACH:

Q:

Please state your full name.

A:

Robert Ray Wallach.

Q:

Where do you live, Mr. Wallach?

A:

I live at 1027 Nambe, Hobbs, New Mexico 88240. Home phone 392-7477. Business phone 392-5008.

Q:

Are you employed by Parabo, Inc.?

A:

Yes.

Q:

In what capacity?

A:

I am the Operations Manager for Parabo, Inc., and in that capacity I am responsible for the overall supervision and control of the receipt and treatment of production brine prior to its surface disposal and the operation of an oil treating plant.

SW/4 29 T21S R38E

Q:

Is Parabo, Inc., the applicant in this docket for a permit from the Oil Conservation Division of the Energy and Minerals Department for an oil treating plant permit?

A:

Yes.

Q:

Please describe the operation proposed for the treatment of materials brought to Parabo, Inc., which require a Form C-117A.

A:

It is my understanding that Form C-117A is required for what is described under the Division Rules as sediment oil and miscellaneous hydrocarbons which include tank bottoms from leases as well as those occurring at pipeline stations, crude oil storage terminals, refineries and pipeline brake oil catching in traps, drips, or scrubbers and any other liquid hydrocarbon which is not lease crude or condensate.

We propose to process the materials by utilization of a 1,000 barrel tank and an auxillary 500 barrel tank. Upon the arrival at the plant of a load requiring a permit we will first determine the volume of the load

and place an equivalent of 1 gallon per 100 barrels of emulsion breaker into the 1,000 barrel tank and the equivalent of 5 gallons of soap per 100 barrels of fluid, i.e., a 140 barrel load would have 1.4 gallons of emulsion breaker and 7 gallons of soap. The load is then pumped off into the top of the 1,000 barrel tank. This is repeated with each load requiring a C-117A permit until the 1,000 barrel tank is full. We will then switch to the totally separate 500 barrel tank where the process will be identical. The 1,000 barrel tank or the 500 barrel tank, whichever is being used, will be permitted to settle out with the benefit of the emulsion breaker and soap action. The light oils move to the top of the tank with an interface with basic sediment and water (BSW) below them. Below the BSW in a rather indistinct interface is a layer of water. On the very bottom of the tank we find the solids primarily iron sulfides, sand and other grit which fall by gravity to the bottom of the tank. This settling process takes a period of 48 to 72 hours, depending upon the ambient air temperature.

Because there is a decrease vertically in the oil content in all materials in the 1,000/500 barrel treating tanks, we propose by utilizing an electric pump, to

transfer all material containing 40% or more of marketable hydrocarbons to our production brine disposal tanks where they are injected at the bottom of the tank under pressure and actually flushed under high pressure through the brine. The determination of the amount of material to be transferred is made by thieving the 1,000/500 barrel treating tanks from the top down and grinding out each sample until the 40% level is reached. The injection and flushing process through the brine disposal tanks results in a significant improvement in the amount of marketable oil, which then rises to the top of those tanks. This is subsequently floated off to an oil sales tank.

The brine water which underlays the area of BSW containing less than 40% oil is pumped off to the production brine disposal facility and treated as other production brine received which do not require Form C-117A. The BSW is sold to other secondary treating plants for additional thermal treating to recover additional amounts of marketable hydrocarbons.

Q:

How do you propose to account for the oil which is brought to you under the C-117A permits?

A:

It is my understanding that the C-117A's will be

required for those things I have described in a previous answer and will come to us with a shake out or ground sample report. Since we will sell from the same tank in our production brine disposal operation all materials which have come from the treating plant, we will, for audit purposes at the end of each month, allocate the oil sold based upon the ratio shown on the C-117A's to the total volume from hot oilers and production brine. The demonstrated hydrocarbon content of the material sold to thermal oil treating plants will, by virtue of the grind out or shake out required prior to their transportation, also be used to show to the extent possible the disposition of all quantities of hydrocarbons shown as received under various Form C-117A's.

Q:

Mr. Wallach, would the operation which you have described constitute an efficient processing, treating and reclaiming of sediment oil?

A:

Yes, although it is not the total reclamation of all sediment oil from the material received by us, it is an efficient and cost effective method of recovering a substantial portion of it with additional portions

being recoverable by the traditional thermal treating plant methods.

Docket No. 9-82

Dockets Nos. 10-82 and 11-82 are tentatively set for April 14 and April 28, 1982. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 31, 1982
9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 7469: (Continued from March 3, 1982, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Division on its own motion to permit H. M. Bailey & Associates, Commercial Union Insurance Company, and all other interested parties to appear and show cause why the following wells on the H. M. Bailey Lease, Township 21 South, Range 1 West, Dona Ana County, should not be plugged and abandoned in accordance with a Division-approved plugging program: In Section 10: Nos. 9 in Unit A, 9, 11, 12, and 13 in Unit B, 10 and 14 in Unit C; and No. 15 in Unit C of Section 9.

CASE 7497: (Continued and Readvertised)

Application of Parabo, Inc. for an oil treatment plant permit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority for the construction and operation of an oil treating plant for the purpose of treating and reclaiming sediment oil at its salt water disposal site in the SW/4 of Section 29, Township 21 South, Range 38 East.

CASE 7516: Application of Benson-Montin-Greer for a unit agreement, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the North Canada Ojitos Unit Area, comprising 12,361 acres, more or less, of Jicarilla Apache Indian lands in Township 27 North, Range 1 West.

CASE 7517: Application of Anadarko Production Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location 1450 feet from the South line and 1400 feet from the West line of Section 15, Township 22 South, Range 37 East, Penrose Skelly Pool, the NE/4 SW/4 of said Section 15 to be dedicated to the well.

CASE 7518: Application of Consolidated Oil & Gas Inc., for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the perforated interval from 8688 feet to 8856 feet in its Midway State Well No. 1, located in Section 8, Township 17 South, Range 37 East, Midway-Abo Pool.

CASE 7519: Application of S & J Oil Company for special pool rules, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Seven Lakes-Menafee Oil Pool to provide for wells to be located not nearer than 25 feet to the quarter-quarter section line nor nearer than 165 feet to lands owned by an offset operator.

CASE 7510: (Continued from March 16, 1982, Examiner Hearing)

Application of Union Oil Company of California for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Penn formations underlying the N/2 of Section 10, Township 22 South, Range 32 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7511: (Continued from March 16, 1982, Examiner Hearing)

Application of Buffton Oil & Gas Inc. for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp through Devonian formations underlying the W/2 of Section 35, Township 16 South, Range 35 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7520: Application of Lewis B. Burleson Inc. for compulsory pooling and a non-standard proration and spacing unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Jalmat Pool underlying a 160-acre non-standard proration unit comprising the NW/4 of Section 15, Township 24 South, Range 36 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 7521: Application of William B. Barnhill for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location 660 feet from the South and West lines of Section 35, Township 19 South, Range 25 East, Permo-Penn, Strawn, Atoka and Morrow formations, the S/2 of said Section 35 to be dedicated to the well.

CASE 7522: Application of Santa Fe Exploration Co. for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location 660 feet from the North and West lines of Section 14, Township 20 South, Range 25 East, Permo-Penn, Strawn, Atoka and Morrow formations, the N/2 of said Section 14 to be dedicated to the well.

CASE 7523: Application of Robert N. Enfield for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Penn formations underlying the E/2 of Section 18, Township 19 South, Range 27 East, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the North and East lines of said Section 18. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 7524 THRU 7535: Application of Jack J. Grynberg for compulsory pooling, Chaves County, New Mexico. Applicant,in each of the following 12 cases, seeks an order pooling all mineral interests down through the Abo formation underlying the lands specified in each case, each to form a standard 160-acre gas spacing and proration unit to be dedicated to a well to be drilled at a standard location thereon. Also to be considered in each case will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells and a charge for risk involved in drilling said wells:

CASE 7524: SE/4 Section 2, Township 5 South, Range 24 East

CASE 7525: SW/4 Section 3, Township 5 South, Range 24 East

CASE 7526: NW/4 Section 3, Township 5 South, Range 24 East

CASE 7527: SE/4 Section 3, Township 5 South, Range 24 East

CASE 7528: NW/4 Section 4, Township 5 South, Range 24 East

CASE 7529: NE/4 Section 4, Township 5 South, Range 24 East

CASE 7530: NW/4 Section 11, Township 6 South, Range 24 East

CASE 7531: SW/4 Section 11, Township 6 South, Range 24 East

CASE 7532: SE/4 Section 27, Township 6 South, Range 24 East

CASE 7533: SW/4 Section 27, Township 6 South, Range 24 East

CASE 7534: NW/4 Section 34, Township 6 South, Range 24 East

CASE 7535: SW/4 Section 17, Township 6 South, Range 25 East

CASE 7515: (Continued and Readvertised)

Application of Four Corners Gas Producers Association for designation of a tight formation, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Dakota formation underlying all or portions of Townships 26 and 27 North, Ranges 12 and 13 West, Township 28 North, Range 13 West, Township 29 North, Ranges 13 through 15 West, and Township 30 North, Ranges 14 and 15 West, containing 164,120 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271. 701-705.

CASE 7499: Application of Amoco Production Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp through Devonian formations underlying the S/2 of Section 3, Township 23 South, Range 34 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7073: (Continued from February 17, 1982, Examiner Hearing)

In the matter of Case 7073 being reopened pursuant to the provisions of Order No. R-6558, which order promulgated special rules for the South Elkins-Fusselman Pool in Chaves County, including provisions for 80-acre spacing units and a limiting gas-oil ratio of 3000 to one. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units with a limiting gas-oil ratio of 2000 to one.

CASE 7074: (Continued from February 17, 1982, Examiner Hearing)

In the matter of Case 7074 being reopened pursuant to the provisions of Orders Nos. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County. All interested parties may appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir.

CASE 7500: Application of Read & Stevens, Inc. for an exception to the maximum allowable base price provisions of the New Mexico Natural Gas Pricing Act, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order of the Division prescribing the price allowed for production enhancement gas under Section 107 of the Natural Gas Policy Act as the maximum allowable base price if production enhancement work which qualifies under the NGPA is performed on its Hackberry Hills Unit Well No. 4 located in Section 22, Township 22 South, Range 26 East, Eddy County, New Mexico.

CASE 7485: (Continued from February 17, 1982, Examiner Hearing)

Application of Berge Exploration for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Abo formation underlying two 160-acre proration units, the first being the NW/4 and the second being the SW/4 of Section 27, Township 7 South, Range 26 East, each to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells and a charge for risk involved in drilling said wells.

CASE 7501: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating and extending certain pools in Chaves, Eddy and Lea Counties, New Mexico.

(a) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the North Caprock-Wolfcamp Pool. The discovery well is The Petroleum Corporation Landlady Well No. 1 located in Unit J of Section 8, Township 12 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 12 SOUTH, RANGE 32 EAST, NMPM
Section 8: SE/4

(b) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Morrow production and designated as the Feather-Morrow Pool. The discovery well is the Santa Fe Energy Company State UTP Well No. 1 located in Unit J of Section 21, Township 15 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 15 SOUTH, RANGE 32 EAST, NMPM
Section 21: SE/4

(c) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Abo Reef production and designated as the Garrett-Abo Reef Pool. The discovery well is the Marathon Oil Company Delmont L. Hatfield Well No. 1 located in Unit J of Section 23, Township 16 South, Range 38 East, NMPM. Said pool would comprise:

TOWNSHIP 16 SOUTH, RANGE 38 EAST, NMPM
Section 23: SE/4

Dockets Nos. 8-82 and 9-82 are tentatively set for March 16 and March 31, 1982. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 3, 1982

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 7469: (Continued from February 3, 1982, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Division on its own motion to permit H. M. Bailey & Associates, Commercial Union Insurance Company, and all other interested parties to appear and show cause why the following wells on the H. M. Bailey Lease, Township 21 South, Range 1 West, Dona Ana County, should not be plugged and abandoned in accordance with a Division-approved plugging program: In Section 10: Nos. 9 in Unit A; 9, 11, 12, and 13 in Unit B, 10 and 14 in Unit C; and No. 15 in Unit C of Section 9.

CASE 7494: Application of Bass Enterprises Production Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Humble City Unit Area, comprising 800 acres, more or less, of State lands in Township 17 South, Range 37 East.

CASE 7495: Application of Gulf Oil Corporation for simultaneous dedication and an unorthodox location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the simultaneous dedication of a previously approved 320-acre non-standard Eumont proration unit comprising the E/2 of Section 25, Township 19 South, Range 36 East, to its Graham State Wells Nos. 8 in Unit J and 9 at an unorthodox location 990 feet from the North line and 1980 feet from the East line of said Section 25.

CASE 7496: Application of Viking Petroleum, Inc. for an unorthodox location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of an Abo gas well to be drilled 62 feet from the South line and 1984 feet from the East line of Section 29, Township 5 South, Range 24 East, the SE/4 of said Section to be dedicated to the well.

CASE 7476: (Continued from February 3, 1982, Examiner Hearing)

Application of Jack J. Grynberg for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests down through and including the Abo formation, underlying two 160-acre gas spacing units, being the NE/4 and SE/4, respectively, of Section 12, Township 5 South, Range 24 East, each to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells and a charge for risk involved in drilling said wells.

CASE 7497: Application of Parabo, Inc. for an oil treatment plant permit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority for the construction and operation of an oil treating plant for the purpose of treating and reclaiming sediment oil at its salt water disposal site in the SE/4 of Section 29, Township 21 South, Range 38 East.

CASE 7458: (Continued from January 6, 1982, Examiner Hearing)

Application of Marks & Garner Production Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of salt water into the Bough C formation in the perforated interval from 9596 feet to 9616 feet in its Betenbough Well No. 2, located in Unit M of Section 12, Township 9 South, Range 35 East.

CASE 7498: Application of Dwayne E. Hamilton for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp through Devonian formations underlying the S/2 of Section 5, Township 16 South, Range 35 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

(d) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Strawn and Atoka production and designated as the Pronghorn Strawn-Atoka Gas Pool. The discovery well is the Yates Petroleum Corporation Pronghorn Unit Well No. 1 located in Unit G of Section 6, Township 23 South, Range 33 East, NMPM. Said Pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 33 EAST, NMPM
Section 6: N/2

(e) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Paddock production and designated as the Skaggs-Paddock Pool. The discovery well is the Conoco Inc. SEMU Burger Well No. 107 located in Unit J of Section 19, Township 20 South, Range 38 East, NMPM. Said pool would comprise:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
Section 19: SE/4

(f) EXTEND the Angell Ranch Atoka-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 27 EAST, NMPM
Section 2: S/2
Section 11: N/2

(g) EXTEND the Atoka-Yeso Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
Section 26: E/2 NW/4 and E/2 SW/4

(h) EXTEND the Austin-Mississippian Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 36 EAST, NMPM
Section 18: S/2

(i) EXTEND the Boyd-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM
Section 3: E/2

(j) EXTEND the Bunker Hill-Penrose Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 31 EAST, NMPM
Section 14: S/2 SW/4
Section 23: N/2 N/2
Section 24: S/2 NW/4 and NE/4 NW/4

(k) EXTEND the South Carlsbad-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 26 EAST, NMPM
Section 36: S/2

(l) EXTEND the Chaveroo-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 33 EAST, NMPM
Section 10: W/2
Section 15: W/2

(m) EXTEND the Dark Canyon-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 25 EAST, NMPM
Section 31: N/2

(n) EXTEND the Drinkard Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
Section 12: E/2

TOWNSHIP 21 SOUTH, RANGE 38 EAST, NMPM
Section 7: NW/4

(o) EXTEND the North Eidson-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 35 EAST, NMPM
Section 6: Lots 3, 4, 5, 6, 11, 12, 13, 14, and SW/4

(p) EXTEND the Happy Valley-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 26 EAST, NMPM
Section 20: S/2

(q) EXTEND the Herradura Bend-Delaware Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 28 EAST, NMPM
Section 29: NW/4 SW/4

(r) EXTEND the Hobbs-Blinebry Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM
Section 34: W/2

TOWNSHIP 19 SOUTH, RANGE 38 EAST, NMPM
Section 3: NW/4

(s) EXTEND the Jalmat Yates-Seven Rivers Oil and Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 35 EAST, NMPM
Section 26: NE/4

(t) EXTEND the South Kemnitz Atoka-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 34 EAST, NMPM
Section 30: W/2

(u) EXTEND the North Loving-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM
Section 20: E/2
Section 21: All
Section 22: S/2
Section 27: All
Section 28: All
Section 29: All

(v) EXTEND the Northeast Lovington-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 37 EAST, NMPM
Section 7: SW/4

(w) EXTEND the North Lusk-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 35: All

(x) EXTEND the Oil Center-Glorieta Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 36 EAST, NMPM
Section 11: NW/4

(y) EXTEND the San Simon-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 35 EAST, NMPM
Section 5: NW/4

(z) EXTEND the Sand Ranch-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 10 SOUTH, RANGE 29 EAST, NMPM
Section 26: All

(aa) EXTEND the Tomahawk-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 32 EAST, NMPM
Section 6: SW/4
Section 7: NW/4

(bb) EXTEND the Travis-Upper Pennsylvanian Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM
Section 12: S/2 SE/4

(cc) EXTEND the Tulk-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH,RANGE 32 EAST, NMPM
Section 35: SW/4

(dd) EXTEND the Turkey Track-Seven Rivers-Queen-Grayburg Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 29 EAST, NMPM
Section 22: SE/4 SW/4

(ee) EXTEND the North Young-Bone Spring Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 8: S/2
Section 9: W/2

Law Offices of
R. E. RICHARDS

R. E. RICHARDS
LAWRENCE D. HANNA

(505) 393-7737
119 North Dalmont
P. O. Box 761
Hobbs, New Mexico 88240

February 10, 1982

Case 7497

Mr. Joe D. Ramey, Director
Oil Conservation Division
Energy and Minerals Department
State of New Mexico
Post Office Box 2088
Santa Fe, New Mexico 87501

Application of Parabo, Inc.,
for a Treating Plant Permit

Dear Joe:

I enclose herewith Application. Thank you.

Very truly yours,

LAW OFFICES OF R. E. RICHARDS

R. E. RICHARDS

RER/da
enclosure
cc:
Parabo, Inc.
Post Office Box 1383
Hobbs, New Mexico 88240 (w/enc)

BEFORE THE ENERGY AND MINERALS DEPARTMENT,
OIL CONSERVATION DIVISION OF THE STATE OF NEW MEXICO

APPLICATION OF PARABO, INC.
FOR A TREATING PLANT PERMIT. DOCKET NO. 7497

A P P L I C A T I O N

COMES NOW, Parabo, Inc., by and through its attorney, R. E. Richards, and moves the Division for an Order approving the operation by applicant of a treating plant, and in support thereof, states:

1. That applicant has been under the authority of Order R-5516, as amended, operating a production brine disposal facility, all as more clearly shown in those Orders which are incorporated herein by reference as if fully set forth herein.

2. That in the scope and course of said operation, applicant is periodically tendered materials commonly called "hot oiler unit blow downs, basic sediment and water, tank bottoms, and other miscellaneous hydrocarbons" as they are defined in Rule 311 of the Division's Rules and Regulations, as amended and effective February 1, 1982.

3. That pursuant to Rule 312 of the Division's Rules and Regulations, as amended and effective February 1, 1982, prior to continued operation regarding those materials described in paragraph 2 hereof in conformity with its prior

operations, applicant is required to seek a treating plant permit; and that such desire is the purpose and intent of this application.

4. That in prior operations (which have been terminated pending approval of this application), such materials when tendered have been deposited into a 1,000 barrel tank and thereafter treated with chemicals and/or hot oil to free marketable hydrocarbons therefrom; that when said oil is broken out from the brine and other materials, it is floated off at the 12' 0" elevation through a 4" pipeline to a 300 barrel oil storage tank, where thereafter more treatment by way of chemicals and/or hot oil is applied in an effort to further segregate the marketable hydrocarbons from any production brine; and that after such treatments have been performed, the material remaining in the 1,000 barrel tank, which has been demonstrated to have less than 50% by volume of marketable hydrocarbons, is sold or otherwise disposed of to an oil processing plant.

5. That the aforementioned operation is located at the site of the Parabo, Inc., facility in the Southwest quarter of Section 29, Township 21 South, Range 38 East, N.M.P.M., Lea County, New Mexico, and has a capacity of 1,000 barrels per cycle.

6. That the proposed plant and method of processing will and does efficiently process, treat, and reclaim marketable hydrocarbons in conformity with Rule 312.

7. That the Division should, pursuant to the requirements of Rule 312, set this application for hearing and after hearing grant to applicant a permit to operate a treating plant pursuant to the Rules and Regulations of the Division; and that applicant is by this application acknowledging the restrictions and requirements placed upon it by said Rule and the duties incumbent thereto, with all of which it agrees to comply.

WHEREFORE, premises considered, applicant prays the Division enter its Order in conformity with the allegations hereof and Order and authorize the granting of a treating plant to applicant.

LAW OFFICES OF R. E. RICHARDS
Post Office Box 761
Hobbs, New Mexico 88240
Attorneys for Applicant.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

December 16, 1983

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Mr. R. E. Richards
Attorney at Law
P. O. Box 761
Hobbs, New Mexico 88240

Re: CASE NO. 7986
ORDER NO. R-5516-B

Applicant:

Parabo, Inc.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other

OCT 6 1983

BEFORE THE ENERGY AND MINERALS DEPARTMENT,
OIL CONSERVATION DIVISION OF THE STATE OF NEW MEXICO

APPLICATION OF PARABO, INC.
FOR AN AMENDMENT TO ORDER R-5516 DOCKET NO. 7986

A P P L I C A T I O N

COMES NOW, Parabo, Inc., by and through its attorneys, the Law Offices of R. E. Richards, P.A., and moves the Division for an Order approving the operation by applicant of an oilfield solid wastes repository and a heavy drilling fluids, muds, tailings, cement and cuttings repository, in connection with and as a part of its' production brine disposal facility, and in support thereof, states:

1. That applicant has been, under the authority of Order R-5516, as amended, operating a production brine disposal facility, all as more clearly shown in those Orders which are incorporated herein by reference as if fully set forth herein.

2. That in the scope and course of said operation, applicant is periodically tendered materials commonly called heavy drilling fluids, muds, tailings, cement and cuttings as well as oilfield solid wastes as they are defined in the Division's Rules and Regulations, as amended.

3. That applicant proposes to deposit the aforementioned drilling materials in an existing pit to be known as Pit #8 located to the Northeast of present Pit #6; and that the proposed Pit #8 has the same geologic formation as the previously permitted pits but because of its average depth versus its surface area it is not well suited for utilization as a production brine evaporation pond.

4. That applicant seeks permission to convert previously permitted Pit #4 to an oilfield solid waste repository.

5. That the aforementioned operations will be located at the site of the Parabo, Inc., facility in the Southwest quarter of Section 29, Township 21 South, Range 38 East, N.M.P.M., Lea County, New Mexico.

6. That the Division should, pursuant to the Rules and Regulations, set this Application for hearing and, after hearing, grant to applicant authority to accept pursuant to the Rules and Regulations of the Division; and that applicant is by this application acknowledging the restrictions and requirements placed upon it by said rules and the duties incumbent thereto, with all of which it agrees to comply.

WHEREFORE, premises considered, applicant prays the Division enter its Order in conformity with the allegations hereof and Order and authorize the operations as described.

LAW OFFICES OF R. E. RICHARDS, P.A.
Post Office Box 761
Hobbs, New Mexico 88240
505-393-7737
Attorneys for Applicant.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7986
Order No. R-5516-B

APPLICATION OF PARABO, INC. FOR
AN AMENDMENT TO DIVISION ORDER
NO. R-5516, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 26, 1983, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 16th day of December, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Parabo, Inc., is the operator of a facility described and permitted in Division Order No. R-5516 entered on August 30, 1977, and amended by Division Order No. R-5516-A entered on March 18, 1981, being a multi-pit surface salt water disposal facility.

(3) That the applicant now seeks approval to dispose of drilling fluids, drill cuttings, and those materials that are normally connected with or are the results of drilling operations in New Mexico such as muds, tailings, and cement in an existing pit, known as "Pit No. 8", which is located in the eastern portion of the previously approved facility in Section 29, Township 21 South, Range 38 East, NMPM, Lea County, New Mexico.

(4) That the applicant also seeks approval to dispose of treated basic sediments and water (B.S. and W.) in a

previously approved salt water disposal pit, known as "Pit No. 4", which is located in the extreme western portion of said facility in the N/2 SW/4 of said Section 29.

(5) That said multi-pit surface salt water disposal facility has been in operation by the applicant since early 1978 and has expanded to include six active salt water disposal pits and the applicant is presently awaiting administrative approval from the Division on a seventh salt water disposal pit, known as "Pit No. 7", which will be located in the far eastern portion of said facility in said Section 29.

(6) That Pit No. 8 lies entirely within the essentially impermeable Triassic Red Bed Clay formation with its floor at an elevation of 3412 feet mean sea level.

(7) That Pit No. 8 is underlain by a layer of naturally deposited Triassic Red Clay at least 50 feet in thickness and that the highest level for the Red Clay or spill point for said pit is at an elevation of 3432.5 feet mean sea level.

(8) That Pit No. 8 was formed by the excavation of and the extraction of the Triassic Red Clay material which was used for the construction of dikes for the facility.

(9) That the applicant proposes that the maximum fill level for Pit No. 8 be limited to a plane one-half foot below the level of the spill point for said pit, said plane being at an elevation of 3432 feet mean sea level.

(10) That Pit No. 8 is located between the proposed Pit No. 7, as described in Finding No. (5) above, and all of the previously approved salt water disposal pits.

(11) That at such time as said Pit No. 7 is granted administrative approval by the Division, the entire eastern portion of the facility including Pit No. 8 will then be surrounded by monitor holes as required by Division Order Nos. R-5516 and R-5516-A.

(12) That the applicant requested that the requirements for new monitor holes around said Pit No. 8 be waived until such time as said proposed Pit No. 7 has received administrative approval from the Division.

(13) That Pit No. 4, as described in Finding No. (4) above, is completely contained by the essentially impermeable Triassic Red Bed Clay either by natural deposition or by man-made dikes

with its floor at an elevation of 3425 feet mean sea level.

(14) That Pit No. 4 is underlain by a layer of naturally deposited Triassic Red Clay at least 50 feet in thickness and that the highest level for the Red Clay or spill point for said pit is at an elevation of 3439 feet mean sea level.

(15) That the applicant also requested that the maximum water level limit of Pit No. 4 of 3435 feet mean sea level, as mandated by Rule No. 4 of Division Order No. R-5516-A, be amended to allow the maximum fill level in said Pit No. 4 to now be limited to a plane one-half foot below the level of the spill point for said pit, said plane being at an elevation of 3438.5 feet mean sea level.

(16) That the entire perimeter of the facility is presently surrounded by monitor holes as mandated by Division Order Nos. R-5516 and R-5516-A.

(17) That the applicant requested that the existing monitor holes in the far western portion of this facility be abandoned.

(18) That the applicant presented no evidence to support their claim that horizontal migration of fluids from the disposed material will not occur in the future.

(19) That that portion of this application proposing the abandonment of any existing monitor holes in the western portion of the facility should be denied.

(20) That the applicant failed to present sufficient evidence that their proposed maximum fill level limits of 3432 feet mean sea level for Pit No. 8 and 3438.5 feet mean sea level for Pit No. 4 are adequate or sufficient to retain any natural precipitation that could cause said pits to overflow their spill points.

(21) That the applicant should provide for the placement of a pipe, or acceptable substitute, in both pits, said pipe to be marked in such a manner as to readily indicate the depth of the disposed material in both pits and the maximum elevation which the disposed material in said pits shall be permitted to attain.

(22) That to promote solidification of disposed materials in Pit Nos. 4 and 8, the applicant proposes to decant, on a regular basis, any fluids which may reside on top of the disposed solids.

(23) That at such time as Pit No. 4 or Pit No. 8 is filled to capacity, it is proposed by the applicant that that pit then be covered in such a manner as to promote surface drainage away from that pit, and that its perimeter be resurveyed for future identification as to its location.

(24) That the amendment of Order No. R-5516 as described above and operation of the authorized disposal system in accordance with the provisions of said order amended as described above will afford reasonable protection to the underground fresh water supplies, will not cause waste nor impair correlative rights, and should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, Parabo, Inc., is hereby authorized to dispose of drilling fluids, drill cuttings, and those materials that are normally connected with or are the results of drilling operations in New Mexico such as muds, tailings, and cement in an existing pit, known as "Pit No. 8," which is located in the eastern portion of the previously approved multi-pit surface salt water disposal facility in Section 29, Township 21 South, Range 38 East, NMPM, Lea County, New Mexico.

(2) That the monitor hole requirements for new pits as mandated in Division Order Nos. R-5516 and R-5516-A are hereby waived, for Pit No. 8, until such time as the proposed salt water disposal Pit No. 7, as described in Finding Nos. (5) and (10) of this Order, has received administrative approval from the Division or for a period of one year from the date of this Order.

(3) That if at the end of the one year period said Pit No. 7 has not received administrative approval for salt water disposal, the applicant shall then provide for the required monitor holes around said Pit No. 8 as mandated in Division Order Nos. R-5516 and R-5516-A.

(4) That the applicant is also authorized to dispose of treated basic sediments and water (B.S. and W.) in a previously approved salt water disposal pit, known as "Pit No. 4," which is located in the far western portion of said facility in the N/2 SW/4 of said Section 29.

(5) That the applicant's request for abandonment of existing monitor holes in the far western portion of said multi-pit surface salt water disposal facility is hereby denied.

(6) That at no time shall disposal be permitted into either Pit No. 4 or Pit No. 8 if the total quantity of disposed materials or water, from both natural precipitation and previous disposal, reaches a plane one foot below the level of the spill point of the Triassic Red Bed Clay formation or the clay dike surrounding said pit; that the specific maximum fill levels in said pits shall be as follows:

Pit No. 4: 3438 feet mean sea level
Pit No. 8: 3431.5 feet mean sea level

(7) That the applicant shall provide for the placement of a pipe, or acceptable substitute, in both pits, said pipe to be marked in such a manner as to readily indicate the depth of the disposed material in the pits and the maximum elevation which the material in said pits shall be permitted to attain.

(8) That the applicant shall, on a regular basis (determined by the applicant and approved by the Supervisor of the Hobbs district office of the Division) decant any fluids which are residing on top of the disposed solids in both Pit No. 4 and Pit No. 8.

(9) That the applicant shall file a monthly report on each pit in duplicate (one copy with the Division's Santa Fe office and one copy with the Hobbs district office of the Division) and shall be postmarked not later than the 15th day of the second month.

(10) That said report shall include: the date, the source, the quantity of disposed material, type of disposed material (drilling fluid, drill cuttings, cement, B.S. and W., etc.), and the total quantity disposed of for that month.

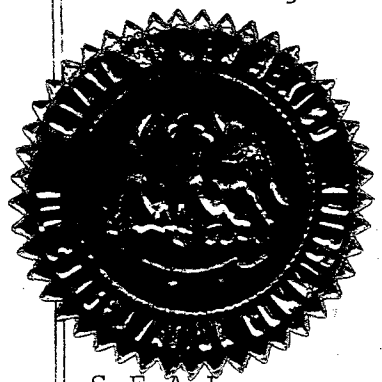
(11) That at such time as either said Pit No. 4 or Pit No. 8 is filled to capacity, the operator shall cover that pit with a layer one foot in thickness of Triassic Red Clay followed with a layer two feet in thickness of random fill material; the perimiter of that pit shall then be resurveyed and the data reported on the facility plot plan, to the Division's Santa Fe office and to the Hobbs district office of the Division.

(12) That before the above-described covering procedures are initiated on either of said pits, the operator shall notify the Division Director so that a representative from the Division may be present to witness any or all of the said covering procedures.

(13) That the Director of the Division may by administrative order rescind the authorization for use of said Pit No. 4 or Pit No. 8 approved under the provisions of this Order whenever it reasonably appears to the Director that such rescission would serve to protect fresh water supplies from contamination.

(14) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year herein-above designated.



S E A L

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

fd/

Dockets Nos. 38-83 and 39-83 are tentatively set for November 9 and November 22, 1983. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 26, 1983

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Michael E. Stogner, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 7985: Application of McClellan Oil Corporation for a unit agreement, Chaves County, New Mexico. Applicant in the above-styled cause, seeks approval for the Marlisue Queen Unit Area comprising 440 acres, more or less, of State land in Township 14 South, Range 29 East.

CASE 7986: Application of Parabo, Inc. for an amendment to Division Order No. R-5516, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Division Order No. R-5516 to dispose heavy drilling fluids, muds, tailings, cement and cuttings as well as oilfield solid wastes at its previously approved salt water disposal facility located in the SW/4 of Section 29, Township 21 South, Range 38 East, NMPM.

CASE 7987: Application of Petro Lewis Corporation for amendment to Administrative Order SWD-244, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Administrative Order SWD-244 to inject into the Entrada formation from approximately 5600 feet to 5700 feet through 3 1/2" plastic-lined tubing set in a packer located at approximately 5,550 feet and to equip the injection well or system with a pressure limiting device that will limit the wellhead pressure on the Federal 12C Well No. 1 located in Unit M of Section 12, Township 19 North, Range 4 West, to no more than 1500 psi.

CASE 7988: Application of Alpha Twenty-One Production Company for an unorthodox location and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the unorthodox location of a gas well to be drilled 1650 feet from the North line and 660 feet from the West line of Section 33, Township 25 South, Range 37 East, Jalmat Gas Pool, and that a 440-acre Jalmat gas proration unit be simultaneously dedicated to said well and the existing El Paso Gregory "A" Federal No. 1 and 2 wells in said Section 33.

CASE 7989: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location 660 feet from the North line and 1,980 feet from the East line of Section 11, Township 18 South, Range 25 East, to test all formations from the top of the Wolfcamp through the Morrow formations, the E/2 of said Section 11 to be dedicated to the well.

CASE 7955: (Continued from October 12, 1983, Examiner Hearing)

Application of Bliss Petroleum, Inc. for the rescission of Order No. R-2789, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the rescission of Order No. R-2789 which approved the South Penrose Skelly Unit.

CASE 7977: (Continued from October 12, 1983, Examiner Hearing)

Application of Chama Petroleum Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in all formations from the surface to the base of the Mississippian formation underlying the N/2 of Section 8, Township 19 South, Range 26 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 7978: (Continued from October 12, 1983, Examiner Hearing)

Application of Chama Petroleum Company for compulsory pooling and an unorthodox well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in all formations from the surface to the base of the Mississippian formation underlying the S/2 of Section 23, Township 19 South, Range 25 East, to be dedicated to a well to be drilled at an unorthodox location 1980 feet from the South line and 660 feet from the East line of said Section 23. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 7990: Application of Inexco Oil Company for compulsory pooling and an unorthodox location Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the top of the Mississippian formation underlying the S/2 NE/4 of Section 14, Township 17 South, Range 37 East, to be dedicated to a well to be drilled at an unorthodox location 1900 feet from the North line and 1800 feet from the East line of said Section 14. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 7991: Application of Robert N. Enfield for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Morrow gas production in the wellbore of its Robert N. Enfield Walters Well No. 1 located in Unit B of Section 7, Township 19 South, Range 27 East.

CASE 7963: (Continued and Readvertised)

Application of Sun Exploration and Production Company for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox Abo oil well location 1260 feet from the North line and 1310 feet from the West line of Section 10, Township 23 South, Range 36 East, the NW/4 NW/4 of said Section 10 to be dedicated to the well.

CASE 7975: (Continued and Readvertised)

Application of Joe E. Brown for nine unorthodox oil well locations, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval of nine unorthodox oil well locations to be drilled on the Farrell Federal Lease as follows:

Well No. 17 1310 FNL and 1310 FEL

Well No. 18 1310 FNL and 2630 FEL

Well No. 19 1310 FNL and 1330 FWL

Well No. 20 2630 FNL and 1310 FWL

Well No. 21 2630 FSL and 1310 FEL

Well No. 22 2630 FSL and 2630 FWL

Well No. 23 1310 FSL and 1310 FWL

Well No. 24 1310 FSL and 2630 FWL

Well No. 25 1310 FSL and 1330 FEL

All in Section 28, Township 7 South, Range 33 East.

CASE 7992: Application of Tenneco Oil Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Mesaverde formation underlying the E/2 of Section 1, Township 29 North, Range 10 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 7971: (Continued and Readvertised)

Application of Tenneco Oil Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota and Mesaverde formations underlying the E/2 of Section 2, Township 30 North, Range 11 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well. Applicant further seeks an order reducing an overriding royalty burden.

Law Offices of
R. E. RICHARDS

(505) 393-7737
Broadway Plaza - Suite 12
215 West Broadway
P. O. Box 761
Hobbs, New Mexico 88240

R. E. RICHARDS
LAWRENCE D. HANNA

October 5, 1983

OCT 6 1983

RECEIVED

Ms. Florene Davidson
Energy and Minerals Department
525 Camino de los Marquez
Santa Fe, New Mexico 87501

Case 7986

RE: Application of Parabo Inc.

Dear Florene:

Pursuant to our conversations I enclose Application in the above matter. Thank you.

Very truly yours,

LAW OFFICES OF R. E. RICHARDS, P.A.

Bob

R. E. RICHARDS

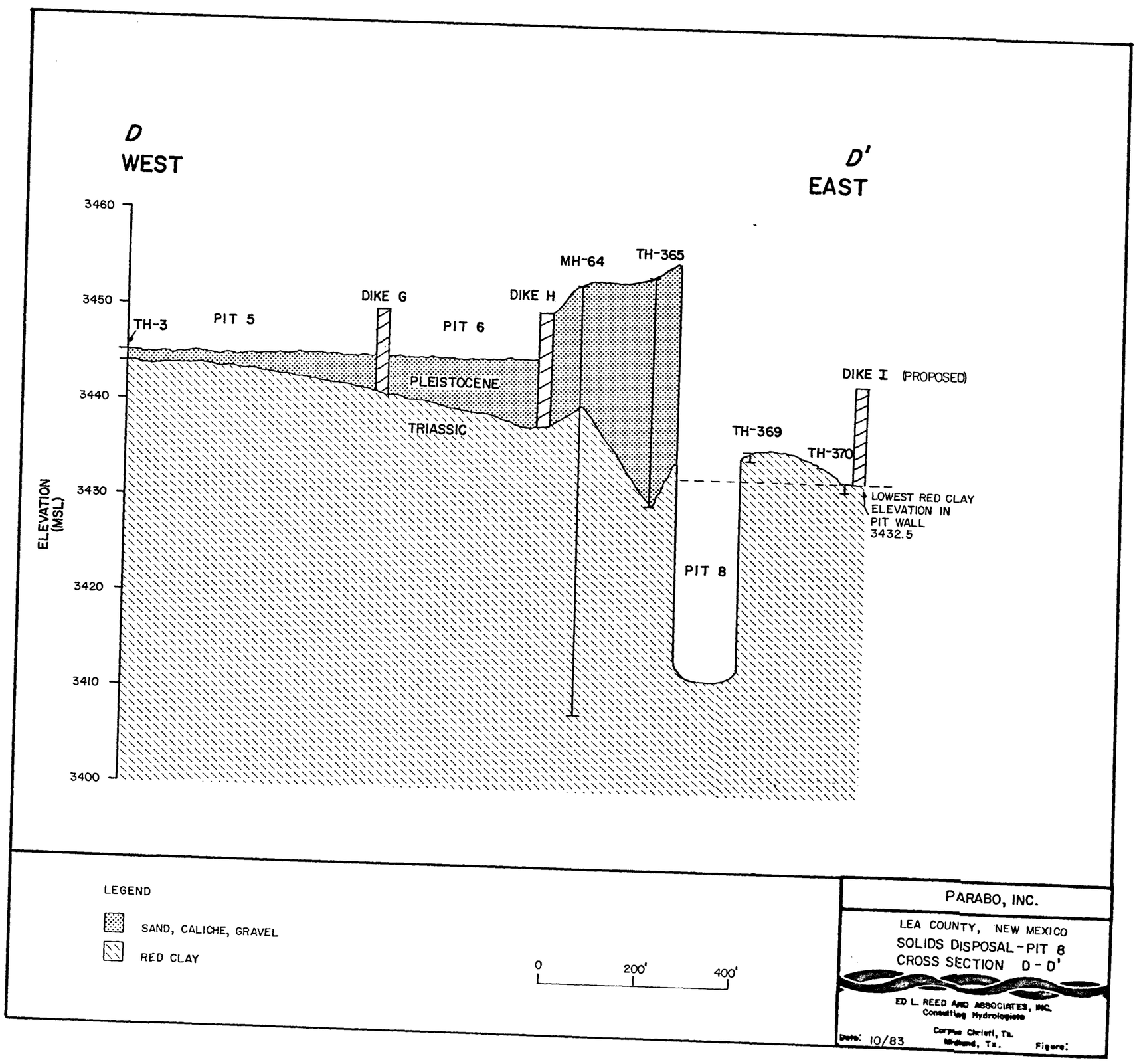
RER/cll

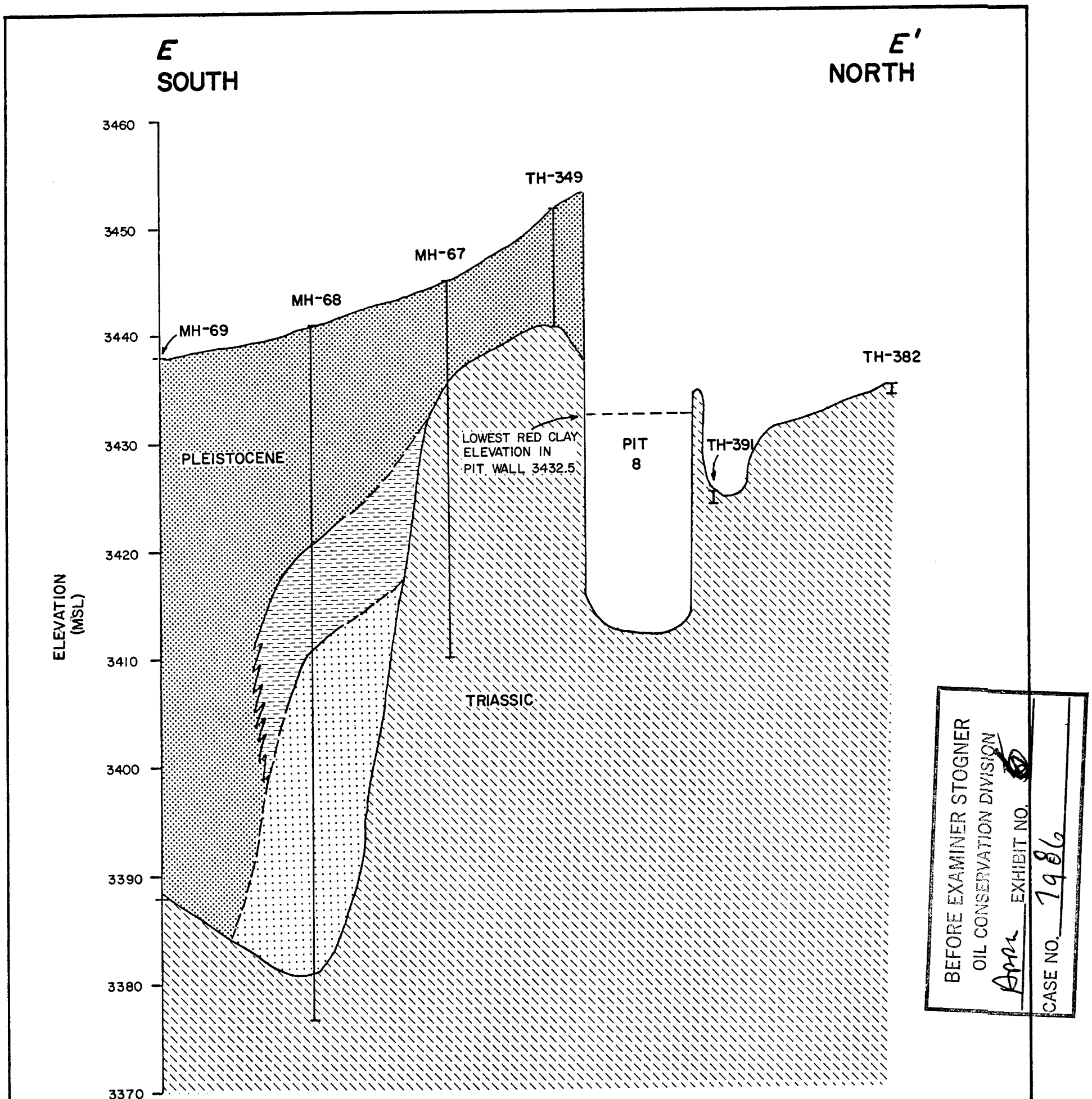
enclosure
cc:
Mr. Jim Britton (w/enc)
Mr. Richard Brakey (w/enc)
Parabo, Inc. (w/enc)

PERMEABILITY OF TRAISSIC CLAYS

BORING	DEPTH INTERVAL	ATTERBURG LIMITS			PERMEABILITY (CM/SEC)
		LL	PL	PI	
1	1-2′	51	25	26	1.4×10^{-6}
2	4-5′	38	16	22	5.6×10^{-8}
	7-7.5′	49	21	28	8.4×10^{-10}
3	0.5-1.5′ -	58	24	34	5.0×10^{-7}
4	7-8.5′	58	22	36	6.5×10^{-8}
5	2-3.5′	59	25	34	4.3×10^{-8}
6	1.5-2.0′	29	15	14	1.7×10^{-7}
	6-6.5	27	12	15	2.6×10^{-7}
7	4-5.5′	56	21	35	8.4×10^{-10}
8	2-2.5′	-	-	-	5.7×10^{-6}
	17′	-	-	-	1.7×10^{-7}
8A	3-4′	27	12	15	3.4×10^{-6}
9	1-2.5′	57	22	35	3.9×10^{-8}
10	2-2.5′	36	16	20	LESS THAN 10^{-8}
11	3.5 - 5.0′	40	20	20	1.9×10^{-7}
	14-15′	47	22	25	1.9×10^{-7}
12	6-7.5′	42	17	25	3.8×10^{-10}
13	1-2′	40	16	24	7.4×10^{-8}
14	11-12.5′	42	15	27	2.9×10^{-9}
6	0-5′ (REMOLDED)	-	-	-	8.5×10^{-9}
11	3.5-5.0 (REMOLDED)	-	-	-	2.8×10^{-8}

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
APPL EXHIBIT NO. 3
CASE NO. 7986





BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
EXHIBIT NO. 8
CASE NO. 1986

LEGEND

- SAND, CALICHE, GRAVEL
- RED SHALE, SAND, GRAVEL
- GRAY-GREEN SANDY SHALE
- RED CLAY

0 200' 400'

PARABO, INC.

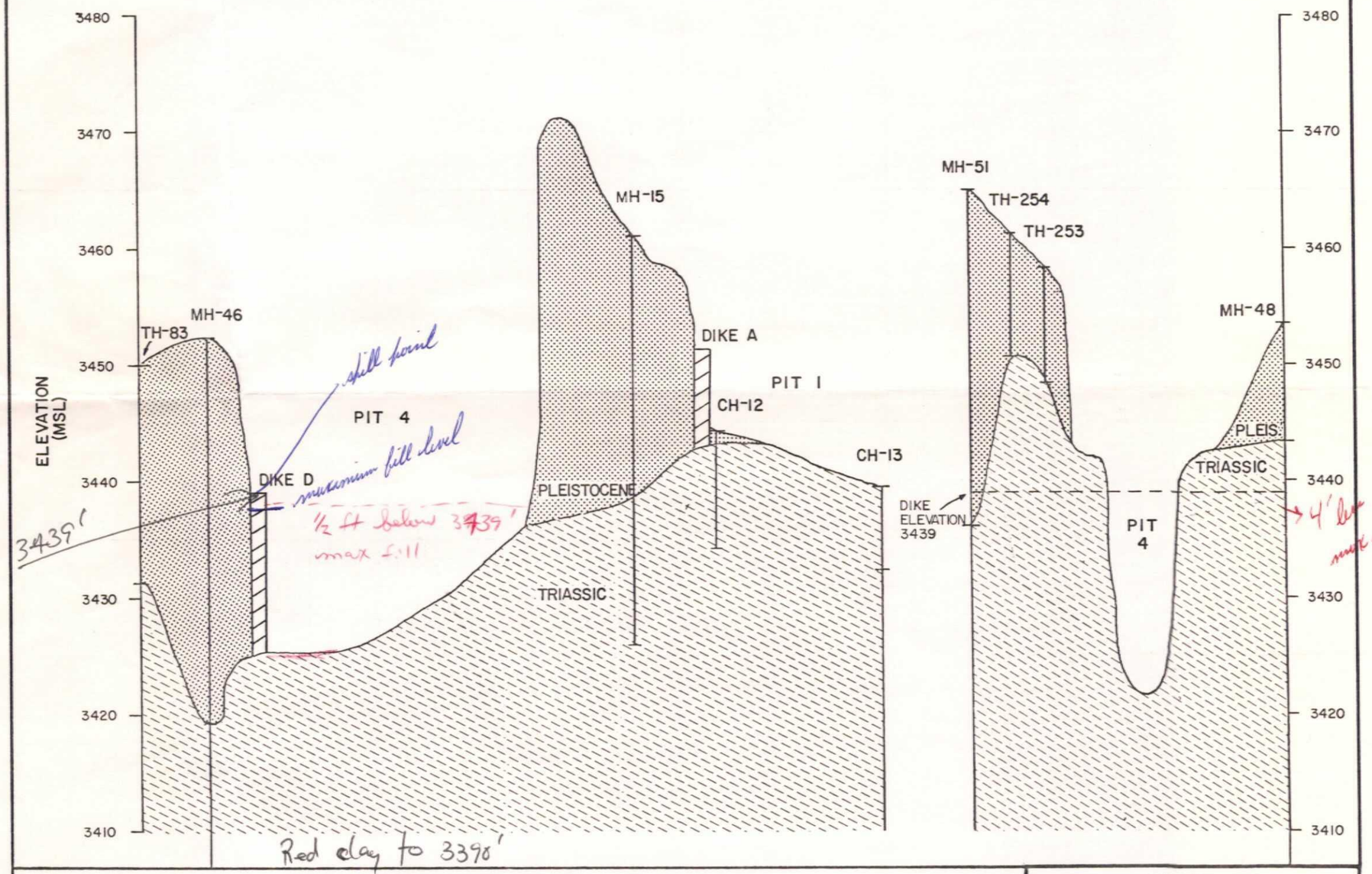
LEA COUNTY, NEW MEXICO
SOLID DISPOSAL-PIT 8
CROSS SECTION E - E'

ED L. REED AND ASSOCIATES, INC.
Consulting Hydrologists
Corpus Christi, Tx.
Midland, Tx.

Date: 10/83 Figure:

F — F' — G — G'

WEST — EAST — SOUTH — NORTH



LEGEND

SAND, CALICHE, GRAVEL

RED CLAY

0 200' 400'

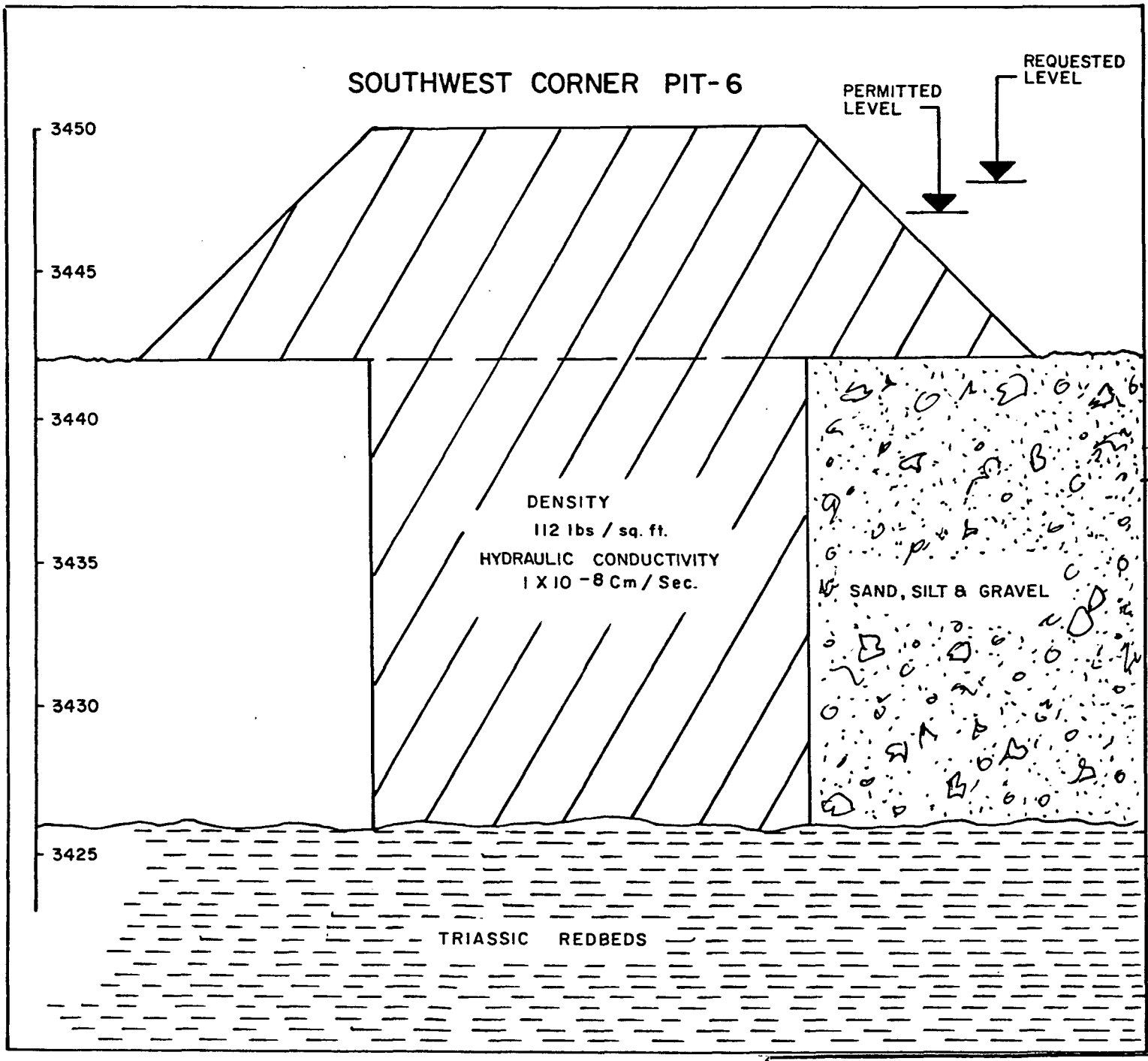
PARABO, INC.

LEA COUNTY, NEW MEXICO
SOLIDS DISPOSAL - PIT 4
CROSS SECTIONS F-F'; G-G'

ED L. REED AND ASSOCIATES, INC.
Consulting Hydrologists
Corpus Christi, Tx.
Midland, Tx.

Date: 10/83 Figure:

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
APPL EXHIBIT NO. 1
CASE NO. 1986



PARABO , INC.

LEA CO. , NEW MEX.
MAXIMUM FREE STANDING
DIKE HEIGHT

ED L. REED AND ASSOCIATES, INC.
Consulting Hydrologists

Corpus Christi, Tx.
Midland, Tx.

Date: 4-17-85

Figure:

PENGAD-Bayonne, N. J.

EXHIBIT

1

DRAINAGE INFLUX

PIT 6 (HAS HIGHEST DRAINAGE AREA/SURFACE AREA RATIO

DRAINAGE AREA 2.31 ACRES

SURFACE AREA 11.50 ACRES

* 100 - YEAR 24 HOUR STORM = 0.5 FT.

$$\frac{2.31 \text{ ACRES} \times 0.5 \text{ FT}}{11.50 \text{ ACRES}} = 0.1 \text{ FT; TOTAL ON PIT} = 0.6 \text{ FT}$$

* 12" STORM

$$\frac{2.31 \text{ ACRES} \times 1.0 \text{ FT}}{11.5 \text{ ACRES}} = 0.2 \text{ FT; TOTAL ON PIT} = 1.2 \text{ FT}$$

THE REPRODUCTION OF

THE

FOLLOWING

DOCUMENT (S)

CANNOT BE IMPROVED

DUE TO

THE CONDITION OF

THE ORIGINAL

WIND SPEED = U_A = 50 MPH
FETCH = F = 500 ft.
DEPTH OF WATER = D = 5 ft

FROM SHORE PROTECTION MANUAL, PG. 3-56, FIG 3-27(a)
WAVE HEIGHT = H = 0.5 ft
PERIOD = T = 0.9 sec.

FIND BREAKING WAVE HEIGHT, H_b,
FROM FIG 7-3 PG. 7-7

$$\frac{H}{gT^2} = \frac{0.5}{32.2(0.9)^2} = .0192$$

THUS $\frac{H_b}{H} = 1.0$ FOR 1:10 SLOPE

$H_b = H = 0.5$ ft

$$\frac{H_b}{gT^2} = \frac{H}{gT^2} = .0192$$

FROM FIG 7-2 PG. 7-6 USING A SLOPE OF 1:10
$\alpha \approx 1.6$
$\beta = \frac{d_B}{H_B} = 1.05$

$d_{B\,max} = \alpha H_B = 1.6(0.5) = 0.8$
$d_{B\,MIN} = \beta H_B = 1.05(0.5) = 0.53$

∴ THUS WITH A SLOPE OF 1:10 BREAKING COULD OCCUR WITH A DIKE TOE DEPTH BE-
TWEEN 0.53 - 0.8 ft

OUR DEPTH IS 8' SO ASSUME NON-BREAKING WAVE.

NOW FIND NON-BREAKING WAVE FORCE & MOMENTS ASSUMING A VERTICAL WALL

USE METHODS DESCRIBED ON PG. 7-161
ASSUME SMOOTH WALL $\chi = 1.0$

$H_i = H = 0.5$ ft

$d = 8$ ft

$T = 0.9$ s

$$\frac{H_i}{d} = \frac{0.5}{8} = 0.0625$$

$$\frac{H_i}{gT^2} = \frac{0.5}{(32.2)(0.9)^2} = .0192$$

FROM FIG. 7-90 FOR $H_i/gT^2 = .0192$

$$\frac{h_o}{H_i} \approx 0.21$$

$$h_o = 0.21\, H_i = 0.21\,(0.5) = 0.105 \text{ ft}$$

FROM EQS. 7-73 & 7-74 ON PG. 7-161 AND FIG. 7-88 ON PG. 7-162

$$\eta_c = d + h_o + \left(\frac{1+\chi}{2}\right) H_i \qquad (7\text{-}73)$$

$$\eta_c = 8 + 0.105 + \left(\frac{1+1}{2}\right) 0.5$$

$$\eta_c = 8.6 \text{ ft}$$

$$\eta_t = d + h_o - \left(\frac{1+\chi}{2}\right) H_i$$

$$\eta_t = 8 + 0.105 - \left(\frac{1+1}{2}\right) 0.5$$

$$\eta_t = 7.6 \text{ ft}$$

∴ THE WALL HAS TO BE ABOUT 8.6 ft TO PREVENT OVERTOPPING (WE ARE O.K.)

FROM FIG 7-91 ON PG. 7-165, THE DIM.-LESS FORCE IS FOUND TO BE (AT WAVE CREST)

$$\frac{F_c}{w d^2} = .001$$

$$F_c = .001\, w d^2 = .001 \left(66.8 \tfrac{lb}{ft^3}\right)(8 ft)^2$$

$$F_c = 4.2 \text{ lb/ft}$$

∴ HYDRODYNAMIC FORCES ARE NEGLIGIBLE

THE AVE. STATIC PRESSURE ON THE WALL IS

$F_H = \frac{1}{2} HW = \frac{1}{2}(8ft)(66.8 \frac{lb}{ft^3}) = 267\ lb/ft^2$

or per linear ft

$F_H = 267\ (8\ ft) = 2138\ lb/ft$

COMPARING THIS TO THE SHEARING FORCES (F_S) CALCULATED BY ED REED & ASSOC.
(FRICTION FACTOR OF 0.4 O.K.)

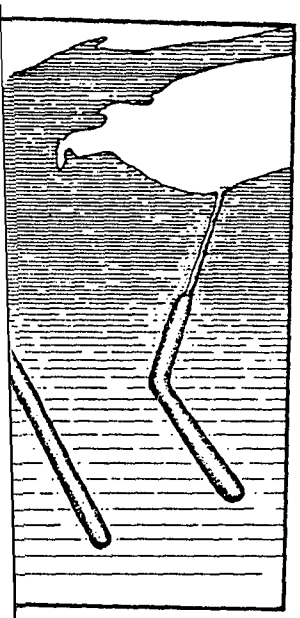
$F_S = 12,055$

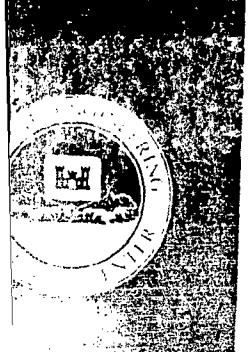
SAFETY FACTOR $= \frac{F_S}{F_H} = \frac{12,055}{2138} = 5.64$

MY CALCULATIONS CONCUR.

SHORE PROTECTION MANUAL

VOLUME I





Coastal Engineering Research Center

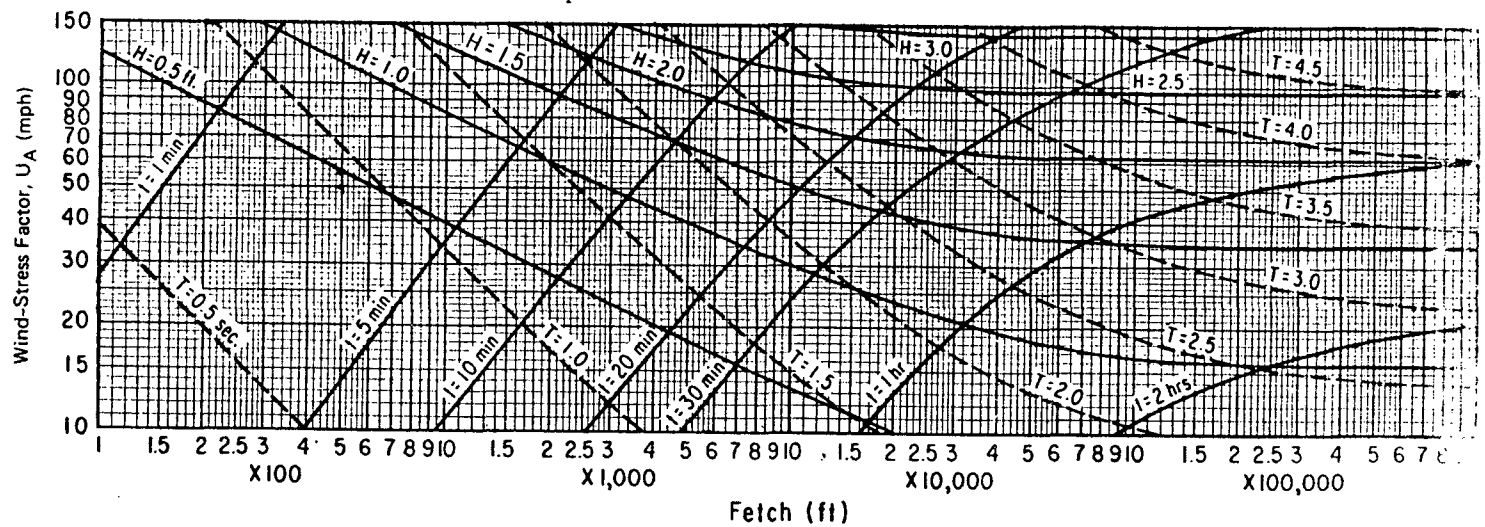
DEPARTMENT OF THE ARMY
Waterways Experiment Station, Corps of Engineers
PO Box 631
Vicksburg, Mississippi 39180

1984

Prepared for

DEPARTMENT OF THE ARMY
Office, Chief of Engineers
Washington, DC 20314

Note: Waves in a water depth of 5 feet with wave periods less than 1.4 secs. are considered to be deepwater waves, i.e. $^{d}/_{T^2} > 2.56$.



Note: Waves in a water depth of 1.5 meters with wave periods less than 1.4 seconds are considered to be deepwater waves, i.e., $^{d}/_{T^2} > 0.78$.

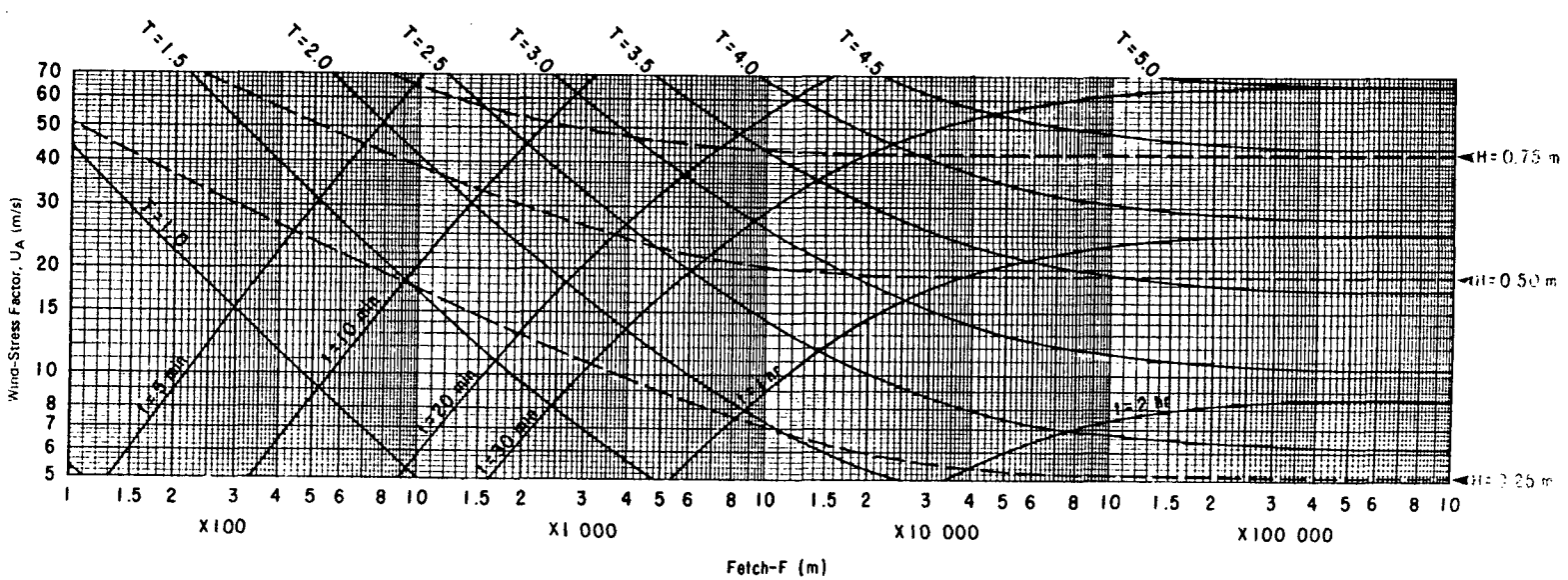
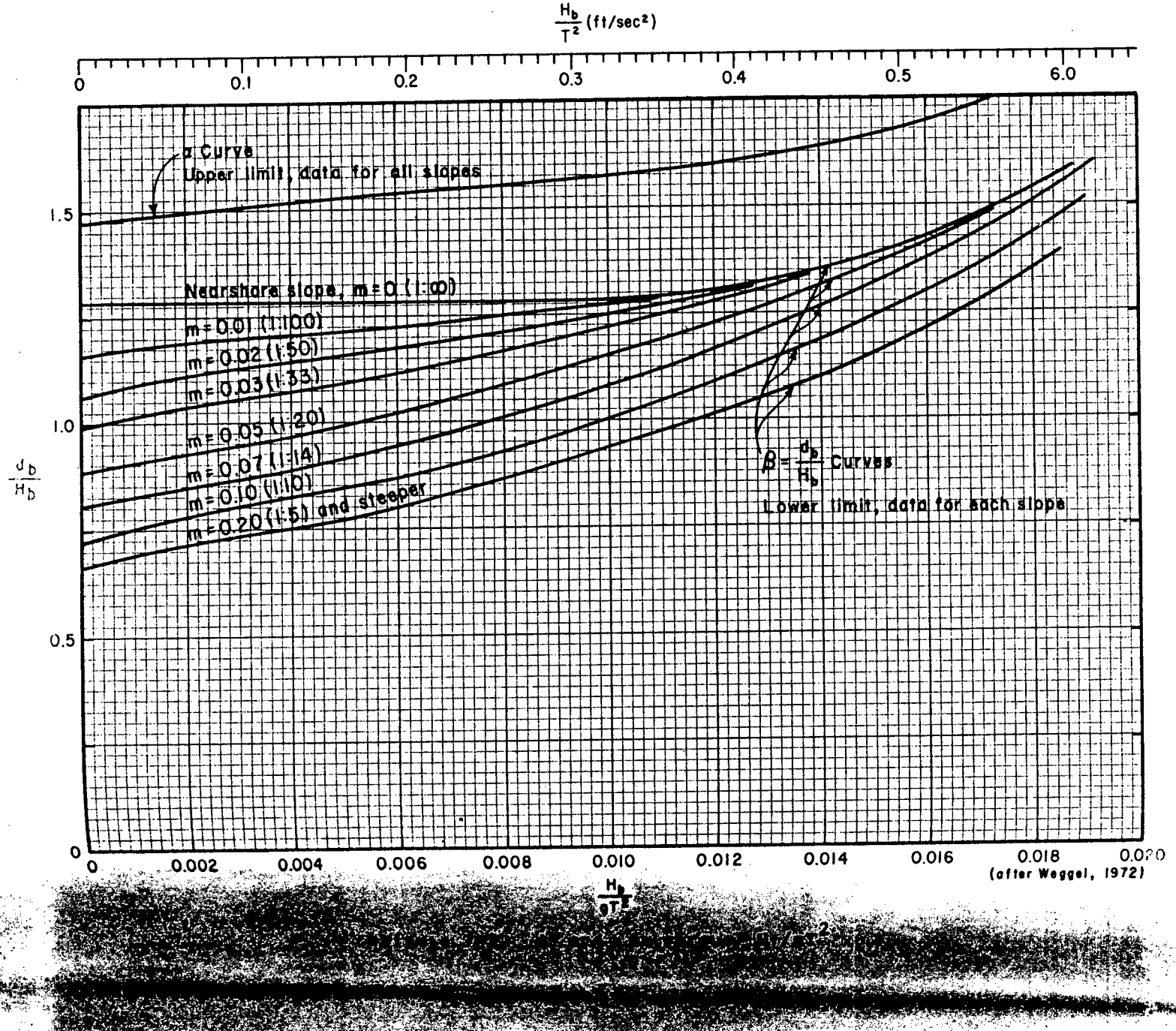


Figure 3-27. Forecasting curves for shallow-water waves; constant depths = 5 feet (upper graph) and 1.5 meters (lower graph).


$\frac{H_b}{T^2}$ (ft/sec²)
0
0.1
0.2
0.3
0.4
0.5
6.0
α Curve
Upper limit, data for all slopes
Nearshore slope, m = 0 (1:∞)
m = 0.01 (1:100)
m = 0.02 (1:50)
m = 0.03 (1:33)
m = 0.05 (1:20)
m = 0.07 (1:14)
m = 0.10 (1:10)
m = 0.20 (1:5) and steeper
$\beta = \frac{d_b}{H_b}$ Curves
Lower limit, data for each slope
$\frac{d_b}{H_b}$
1.5
1.0
0.5
0
0
0.002
0.004
0.006
0.008
0.010
0.012
0.014
0.016
0.018
0.020
$\frac{H_b}{gT^2}$
(after Weggel, 1972)

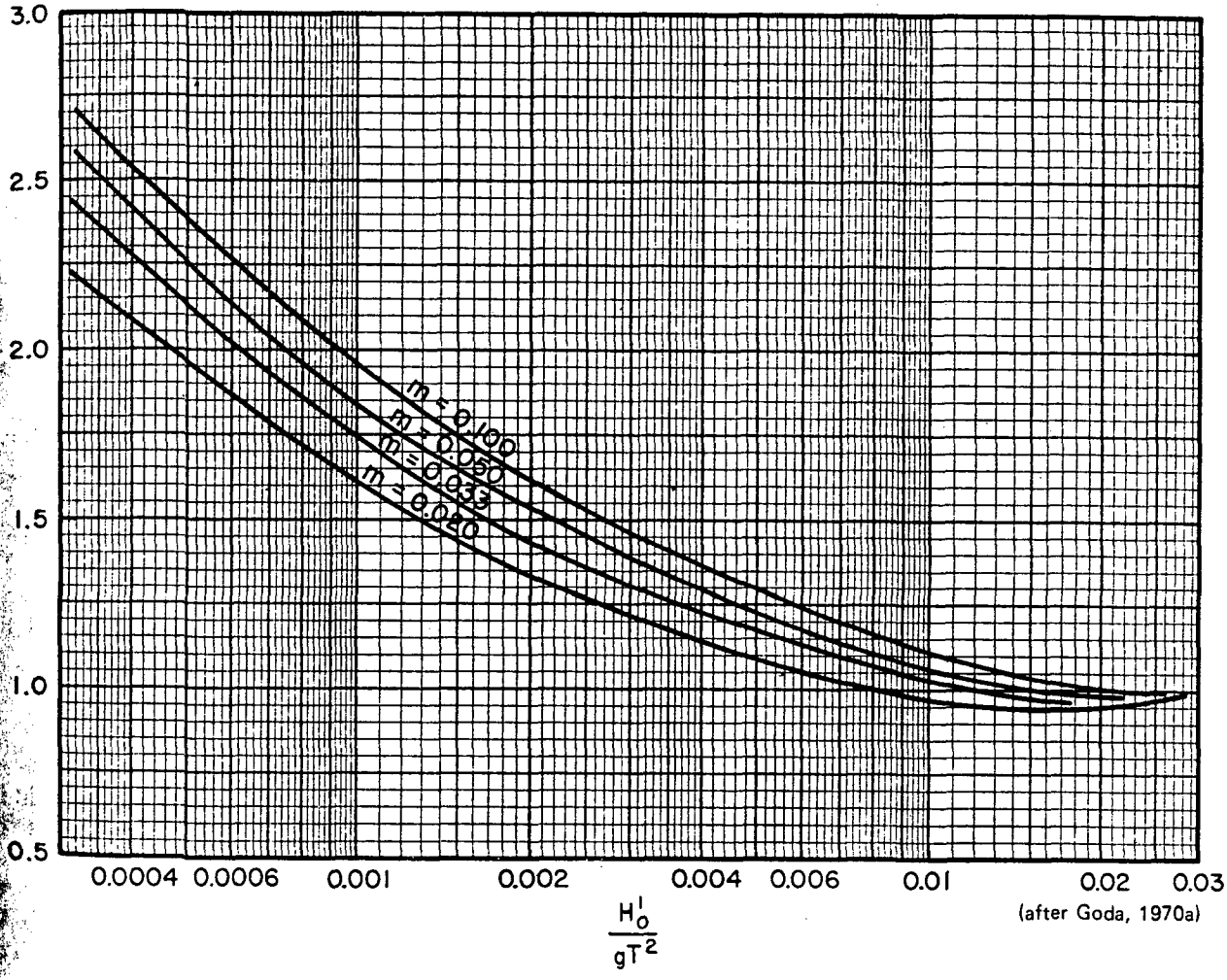


Figure 7-3. Breaker height index H_b/H_o' versus deepwater wave steepness H_o'/gT^2 .

2. Nonbreaking Wave Forces on Walls.

a. General. In an analysis of wave forces on structures, a distinction is made between the action of *nonbreaking, breaking,* and *broken* waves (see Sec. 7, Selection of Design Waves). Forces due to nonbreaking waves are primarily hydrostatic. Broken and breaking waves exert an additional force due to the dynamic effects of turbulent water and the compression of entrapped air pockets. Dynamic forces may be much greater than hydrostatic forces; therefore, structures located where waves break are designed for greater forces than those exposed only to nonbreaking waves.

b. Nonbreaking Waves. Typically, shore structures are located in depths where waves will break against them. However, in protected regions, or where the fetch is limited, and when depth at the structure is greater than about 1.5 times the maximum expected wave height, nonbreaking waves may occur.

Sainflou (1928) proposed a method for determining the pressure due to nonbreaking waves. The advantage of his method has been ease of application, since the resulting pressure distribution may be reasonably approximated by a straight line. Experimental observations by Rundgren (1958) have indicated Saniflou's method overestimates the nonbreaking wave force for steep waves. The higher order theory by Miche (1944), as modified by Rundgren (1958), to consider the wave reflection coefficient of the structure, appears to best fit experimentally measured forces on vertical walls for steep waves, while Sainflou's theory gives better results for long waves of low steepness. Design curves presented here have been developed from the Miche-Rundgren equations and the Sainflou equations.

c. Miche-Rundgren: Nonbreaking Wave Forces. Wave conditions at a structure and seaward of a structure (when no reflected waves are shown) are depicted in Figure 7-88. The wave height that would exist at the structure if the structure were not present is the incident wave height H_i. The wave height that actually exists at the structure is the sum of H_i and the height of the wave reflected by the structure H_r. The wave reflection coefficient χ equals H_r/H_i. Wave height at the wall H_w is given as

$$H_w = H_i + H_r = (1 + \chi)\, H_i \tag{7-72}$$

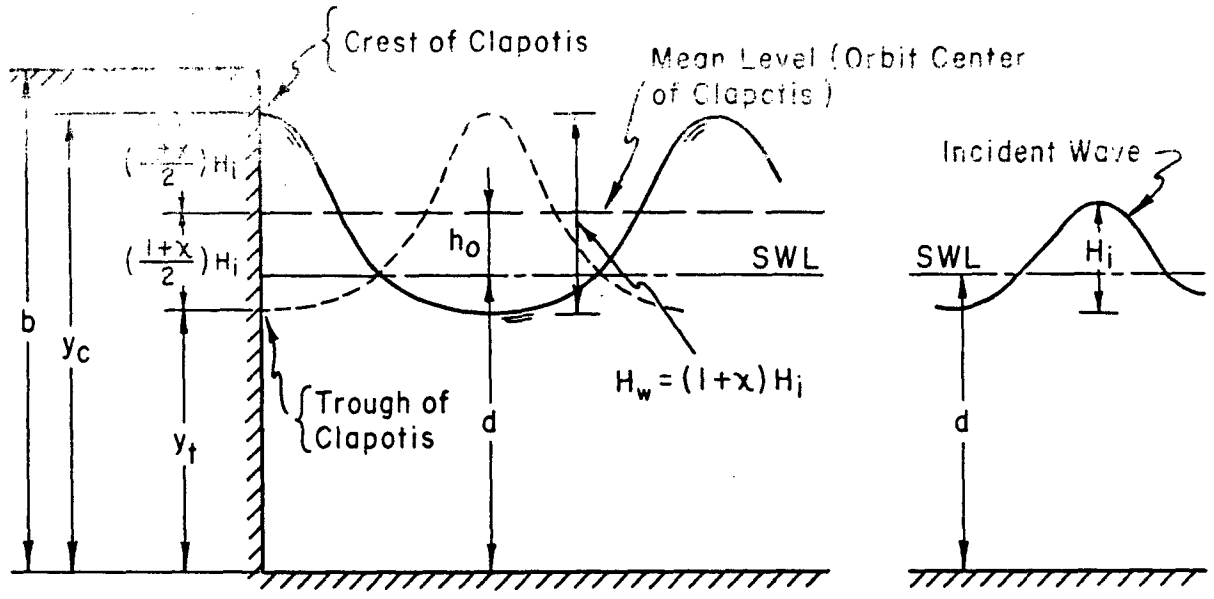
If reflection is complete and the reflected wave has the same amplitude as the incident wave, then $\chi = 1$ and the height of the *clapotis* or *standing wave* at the structure will be $2H_i$. (See Figure 7-88 for definition of terms associated with a clapotis at a vertical wall.) The height of the clapotis crest above the bottom is given by

$$y_c = d + h_o + \frac{1 + \chi}{2} H_i \tag{7-73}$$

where h_o is the height of the clapotis orbit center above SWL.

The height of the clapotis trough above the bottom is given by

$$y_t = d + h_o - \frac{1 + \chi}{2} H_i \tag{7-74}$$



d = Depth from Stillwater Level

H_i = Height of Original Free Wave (In Water of Depth, d)

χ = Wave Reflection Coefficient

h_o = Height of Clapotis Orbit Center (Mean Water Level at Wall) Above the Stillwater Level (See Figures 7-90 and 7-93)

y_c = Depth from Clapotis Crest = $d + h_o + \left(\frac{1+\chi}{2}\right) H_i$

y_t = Depth from Clapotis Trough = $d + h_o - \left(\frac{1+\chi}{2}\right) H_i$

b = Height of Wall

Figure 7-88. Definition of Terms: nonbreaking wave forces.

The reflection coefficient, and consequently clapotis height and wave force, depends on the geometry and roughness of the reflecting wall and possibly on wave steepness and the "wave height-to-water depth" ratio. Domzig (1955) and Greslou and Mahe (1954) have shown that the reflection coefficient decreases with both increasing wave steepness and "wave height-to-water depth" ratio. Goda and Abe (1968) indicate that for reflection from smooth vertical walls this effect may be due to measurement techniques and could be only an apparent effect. Until additional research is available, it should be assumed that smooth vertical walls completely reflect incident waves and $\chi = 1$. Where wales, tiebacks, or other structural elements increase the surface roughness of the wall by retarding vertical motion of the water, a lower value of χ may be used. A lower value of χ also may be assumed when the wall is built on a rubble base or when rubble has been placed seaward of the structure toe. *Any value of χ less than 0.7 should not be used for design purposes.*

Pressure distributions of the crest and trough of a clapotis at a vertical wall are shown in Figure 7-89. When the crest is at the wall, pressure

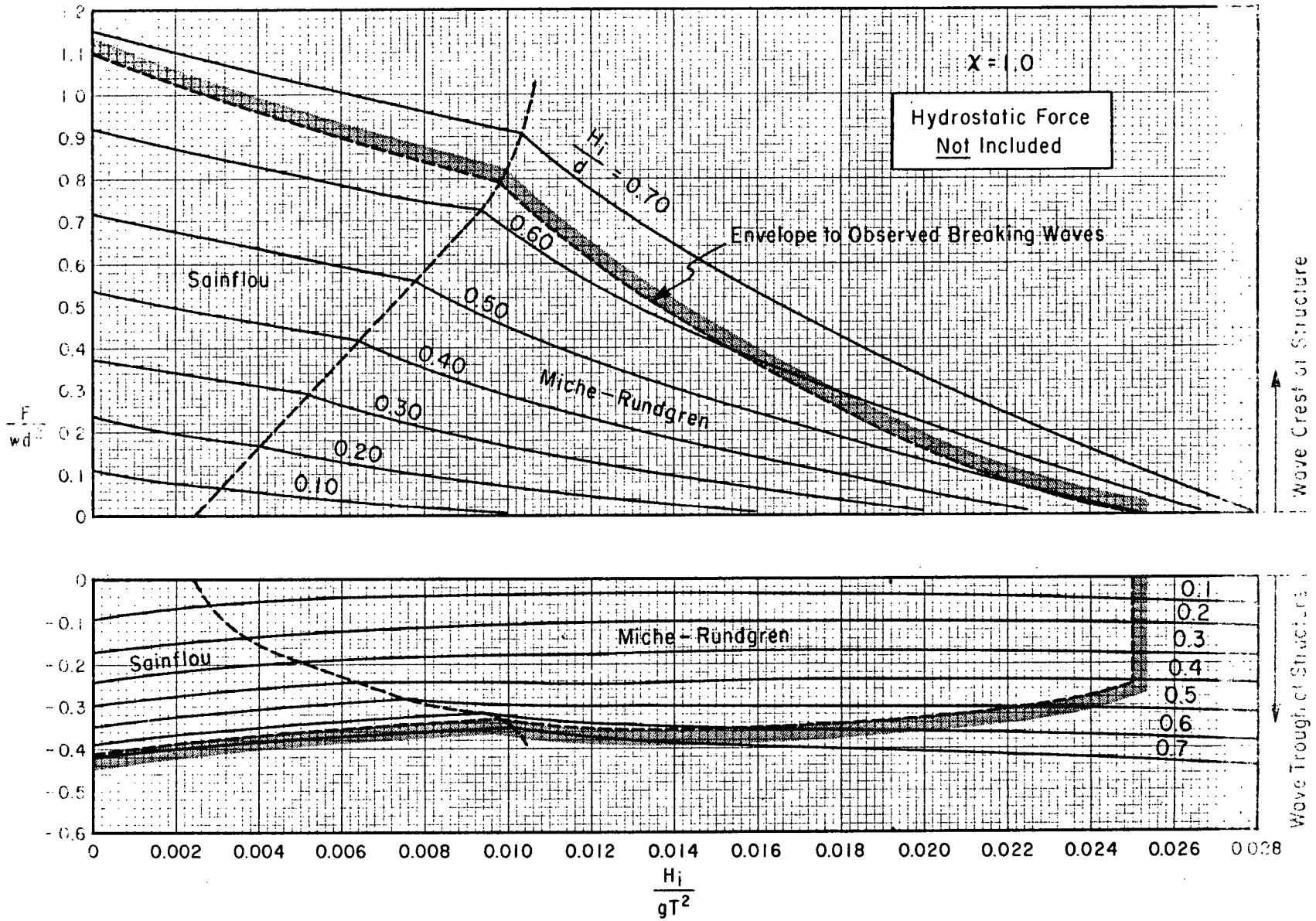
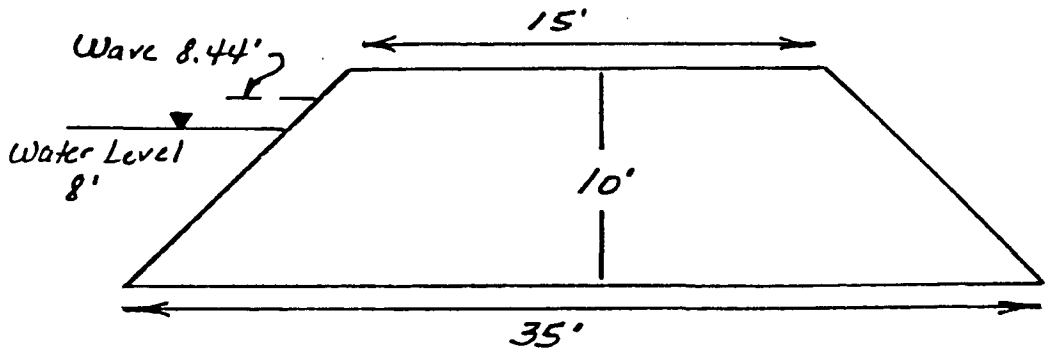


Figure 7-91. Nonbreaking wave forces; $\chi = 1.0$.

PERMEABILITY OF TRAISSIC CLAYS

BORING	DEPTH INTERVAL	ATTERBURG LIMITS			PERMEABILITY
		LL	PL	PI	(CM/SEC)
1	1-2′	51	25	26	1.4×10^{-6}
2	4-5′	38	16	22	5.6×10^{-8}
	7-7.5′	49	21	28	8.4×10^{-10}
3	0.5-1.5′	58	24	34	5.0×10^{-7}
4	7-8.5′	58	22	36	6.5×10^{-8}
5	2-3.5′	59	25	34	4.3×10^{-8}
6	1.5-2.0′	29	15	14	1.7×10^{-7}
	6-6.5	27	12	15	2.6×10^{-7}
7	4-5.5′	56	21	35	8.4×10^{-10}
8	2-2.5′	-	-	-	5.7×10^{-6}
	17′	-	-	-	1.7×10^{-7}
8A	3-4′	27	12	15	3.4×10^{-6}
9	1-2.5′	57	22	35	3.9×10^{-8}
10	2-2.5′	36	16	20	LESS THAN 10^{-8}
11	3.5 - 5.0′	40	20	20	1.9×10^{-7}
	14-15′	47	22	25	1.9×10^{-7}
12	6-7.5′	42	17	25	3.8×10^{-10}
13	1-2′	40	16	24	7.4×10^{-8}
14	11-12.5′	42	15	27	2.9×10^{-9}
6	0-5′ (REMOLDED)	-	-	-	8.5×10^{-9}
11	3.5-5.0 (REMOLDED)	-	-	-	2.8×10^{-8}

HYDROSTATIC FORCES AND WAVE HEIGHT



AVERAGE HORIZONTAL STATIC PRESSURE = $\frac{1}{2}(8')(\gamma)$

(A) S.G = 1.0707; γ = 66.812 LB/FT^3 (100,000 PPM NaCl)

$PX = \frac{1}{2}(8')\ (66.812\ LB/FT^3)$

$= 267.25\ LB/FT^2$ (HORIZONTAL PRESSURE)

(I) $FX = 267.25\ LB/FT^2 \times 8\ FT^2 = 2138$ LB PER LINEAR FOOT
(HORIZONTAL HYDROSTATIC FORCE AGAINST DIKE)

(II) OTHER HORIZONTAL FORCES (HYDRODYNAMIC PLUS EXCESS STATIC)

SHALLOW WATER WAVE CHARACTERISTICS:

ASSUME THE FOLLOWING:

WIND SPEED = 50 MPH

FETCH = 500 FEET

DEPTH OF WATER = 5 FEET

THEN, WAVE HEIGHT = 0.875 FEET

PERIOD = 1.62 SEC.

WATERLENGTH, $L = 5.12T^2 = 13.44$ FEET
BREAKING DEPTH = 1 FOOT (SEE P. 4)

EXHIBIT 4

PENGAD-Bayonne, N. J.

THUS HYDRODYNAMIC FORCES ARE NEGLIGIBLE

TOTAL HORIZONTAL FORCES = HORIZONTAL HYDROSTATIC FORCES

= 2138 LB/FOOT

SHEARING FORCES = F(W+V+U+X)

WHERE, W = WEIGHT OF STRUCTURE

V = WEIGHT OF WATER BEARING VERTICALLY DOWNWARD ON STRUCTURE

U = UPLIFT FORCES

X = SUM OF OTHER VERTICAL FORCES

F = FRICTION FACTOR (ASSUMED = .4)

$$\text{WEIGHT OF STRUCTURE} = \frac{(15 + 35)}{2} (10') (1') (112 \text{ LB/FT}^3)$$

= 28,000 LB/LINEAR FOOT

$$\text{WEIGHT OF WATER} = \frac{8'}{2} (8') (1') (66.812 \text{ LB/FT}^3)$$

= 2,138 LB/FT

UPLIFT FORCES = 0

OTHER VERTICAL FORCES = 0

THEREFORE S = 0.4 (28,000 + 2138 + 0 + 0)

= 12,055 LB/FT

*SAFETY FACTOR = SHEARING FORCES/HORIZONTAL FORCES

= 12,055/2138

= 5.64

AT S.G. = 1.1478; γ = 71.623 LB/FT^3 (200,000 PPM NaCl)

PX = 4' x 71.623 LB/FT^3

= 286.5 LB/FT^2

$$FX = 286.5 \text{ LB/FT}^2 \times 8 \text{ FT}^2$$

$$= 2292 \text{ LB/LINER FOOT}$$

$$\text{SHEARING FORCES, } S = 0.4 \text{ (28,000 LB/FT + 2292 LB/FT)}$$

$$= 12{,}117 \text{ LB/FT}$$

$$*\text{SAFETY FACTOR} = 12{,}117/2292$$

$$= 5.27$$

$$\frac{Ho'}{Lo} = \frac{.875'}{13.44'} = .0651$$

FROM FIG 2-65, P 2-122 SHORE PROTECTION MANUEL

$$\frac{H_B}{Ho'} = 1.12 \text{ (FOR BEACH SLOPE OF 1:10)}$$
$$= 1.18 \; H_B/Ho' \text{ WOULD BE GREATER FOR SLOPE OF 1:1}$$

$H_B = 1.18 \times .875' = 1.033$

$$\frac{H_B}{GT^2} = \frac{1.033}{32.2\ (1.62)^2} = 0.0122$$

FROM FIG 2-66, P 2-123

$$\frac{D_B}{H_B} = 0.98$$

$DB = 98\ (1.033') = 1.01'$ (SPILLING OCCURS)


← S
Pit No. 4
→ N

BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
APPL. EXHIBIT NO. 4
CASE NO. 1486

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

J. R. Stogner 11/10/83

CASE NO. [redacted]
Order No. [redacted]-B

APPLICATION OF PARABO, INC. FOR AN AMENDMENT TO DIVISION ORDER NO. R-5516, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 26, 1983, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this ____ day of December, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Parabo, Inc., is the operator of a facility described and permitted in Division Order No. R-5516 entered on August 30, 1977 and amended by Division Order No. R-5516-A entered on [redacted], being a multi-pit surface salt water disposal facility.

(3) That the applicant now seeks approval to dispose of drilling fluids, drill cuttings, and those materials that are normally connected with or are the results of drilling operations in New Mexico such as muds, tailings, and cement in an existing pit, known as "Pit No. 8", which is located in the eastern portion of the previously approved facility in Section 29, Township 21 South, Range 38 East, N.M.P.M., Lea County, New Mexico.

(4) That the applicant also seeks approval to dispose of treated basic sediments and water (B.S. and W.) in a previously approved salt water disposal pit, known as "Pit No. 4", which is located in the extreme western portion of said facility in the N/2 SW/4 of said Section 29.

(5) That said multi-pit surface salt water disposal facility has been in operation by the [redacted] applicant since early 1978 and has expanded to include six active salt water disposal pits and the applicant is presently awaiting administrative approval from the Division on a seventh salt water disposal pit, known as "Pit No. 7", which will be located in the far eastern portion of said facility in said Section 29.

(6) That Pit No. 8 lies entirely within the essentially impermeable Triassic Red Bed Clay formation with its floor at an elevation of 3412 feet mean sea level.

(7) That Pit No. 8 is underlain by a layer of naturally deposited Triassic Red Clay at least 50 feet in thickness and that the highest level ~~on spill point for the~~ for the Red Clay ~~involved~~ or spill point for said pit is at an elevation of 3432.5 feet mean sea level

(8) That Pit No. 8 was formed by the excavation of and the extraction of the Triassic Red Clay material which was used for the construction of dikes for the Facility.

(9) That the applicant proposes that the maximum fill level for Pit No. 8 be limited to a plane one-half foot below the level of the spill point for said pit, said plane being at an elevation of 3432 feet mean sea level.

(10) That Pit No. 8 is located between ~~said Pit No. 7~~ the prosesed Pit No. 7, as previously described in Finding No. (5) above, and all of the previously approved salt water disposal pits.

(11) That at such time as said Pit No. 7 is granted administrative approval by the Division, the entire eastern portion of the Facility encluding Pit No. 8 will then be surrounded by monitor holes as required by Division Order Nos. R-5516 and R-5516-A.

(12) That the applicant requested that the requirements for new monitor holes around ~~any new pit~~ said Pit No. 8 be waived ~~such time as said~~ until such time as said proposed Pit No. 7 has received administrative approval from the Division.

(13) That Pit No. 4, as described in Finding No. (4) above, is completely contained by the essentially impermeable Triassic Red Bed Clay either by natural deposition or by manmade dikes with its floor at an elevation of 3425 feet mean sea level.

(14) That Pit No. 4 is underlain by a layer of naturally deposited Triassic Red Clay at least 50 feet in thickness and that the highest level for the Red Clay or spill point for said pit is at an elevation of 3439 feet mean sea level.

(15) That the applicant also requested that ~~Rule No. 4 of Division Order No. R-5516-A, be amended to allow the maximum~~ Pit No. 4 of water level limit of 3435 feet mean sea level, as mandated by Rule No. 4 of Division Order No. R-5516-A, be amended to allow the maximum fill level in said Pit No. 4 now be limited to a plane one-half foot below the level of the spill point for said pit, ~~said plane being at an elevation of 3438.5 feet mean sea level.~~

(16) That the entire perimeter of the facility is presently surrounded by monitor holes as mandated by ~~Order~~ Division Order Nos. R-5516 and R-5516-A.

(17) That the applicant requested that the existing monitor holes in the far western portion of this facility be abandoned.

(18) That the applicant presented no evidance to support their claim that horizontal migration of fluids from the disposed material will not ~~occure~~ occur in the future.

(19) That that portion of this application ~~dealing with the~~ proposing the abandonment of any existing monitor holes in the western portion of the facility should be ~~dismissed~~. denied

(20) That the applicant failed to present sufficient evidence that ~~the~~ their proposed maximum fill level limits of 3432 feet mean sea level for Pit No. 8 and 3438.5 feet mean sea level for ~~a~~ Pit No. 4 ~~is~~ are adequate or sufficient to retain any natural precipitation that could cause said pits to ~~overflow their spill points~~.

(21) That ~~the~~ applicant should provide for the placement of a pipe, or acceptable ~~or~~ substitute, in both pits, said pipe to be marked in such a manner as to readily indicate the depth of the disposed material in both pits and the maximum elevation which the disposed material in ~~both~~ said pits shall be permitted to attain.

(22) That to promote solidification of disposed ~~materials~~ in Pit Nos. 4 and 8, the applicant proposes to decant, on a regular basis, any fluids that may exist on top of the disposed ~~materials~~.

(23) That at such time as Pit No. 4 or Pit No. 8 is filled to capacity, it is proposed by the applicant that that pit than be covered in such a manner as to promote surface drainage away from that pit, and that its perimeter be re-surveyed for future identification as to its location.

(24) That the amendment of Order No. R-5516 as described above and operation of the authorized disposal system in accordance with the provisions of said order amended as described above will afford reasonable protection to the underground fresh water supplies, will not cause waste nor impair correlative rights, and should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, Parabo, Inc., is hereby authorized to dispose of drilling fluids, drill cuttings, and those materials that are normally connected with or are the results of drilling operations in New Mexico such as muds, tailings, and cement in an existing pit, know as "Pit No. 8", which is located in the eastern portion of the previously approved multi-pit surface salt water disposal facility in Section 29, Township 21 South, Range 38 East, N.M.P.M., Lea County, New Mexico.

(2) That the monitor hole requirements for new pits as mandated in Division Order Nos. R-5516 and R-5516-A are hereby waived, for Pit No. 8, until such time as the proposed salt water disposal ~~#~~ Pit No. 7, as previously described in Finding Nos. (5) and (10) of this Order, has received administrative approval from the Division or for a period of one year from the date of this Order.

(3) That if ~~at the end of the one year period said~~ Pit No. 7 has not received ~~administrative~~ approval for salt water disposal, the applicant shall then provide for the required monitor holes around said Pit No. 8 as mandated in Division Order Nos. R-5516 ~~and~~ R-5516-A.

(4) That the applicant is also authorized to dispose of treated basic sediments and water (B.S. and W.) in a previously approved salt water disposal pit, know as "Pit No. 4", which is located in the far western portion of said facility in the N/2 SW/4 of said Section 29.

(5) That the applicants request for abandonment of existing monitor holes in the far western portion of said multi-pit surface salt water disposal facility is hereby ~~denied~~ denied.

(6) That at no time shall disposal be permitted into either Pit No. 4 or Pit No. 8 ~~both said Pit Nos. 4 and 8~~ if the total quanity of disposed materials or water, from both ~~or~~ natural precipitation and previous disposal, reaches a plane one foot below the level of the spill point of the Triassic Red Bed Clay formation or the clay dike surrounding said pit; that the specific maximum fill levels ~~for~~ in ~~the~~ said pits shall be as follows:

Pit No. 4: 3438 feet mean sea level
Pit No. 8: 3431.5 feet mean sea level

(7) That the applicant shall provide for the placement of a pipe, or acceptable substitute, in ~~the~~ both pits, said pipe to be marked in such a manner as to readily indicate the depth of the ~~water~~ disposed material in the pits and the maximum elevation which the ~~water~~ material in said pits shall be permitted to attain.

(8) That the applicant shall, on a regular basis (determined by the applicant and approved by the Supervisior ~~Hobb~~ of the Hobbs district office of the Division) decant any fluids which are residing on top of the disposed solids in both Pit No. 4 and Pit No. 8.

(9) That the applicant shall file a monthly report on each pit in duplicate (one copy with the Division's Santa Fe office and one copy with the Hobbs district office of the Division) and shall be postmarked not later than the 15th day of the second month.

(10) That said report shall include; the date, the source, the quantity of disposed material, type of disposed material ([redacted] drilling fluid, drill cuttings, cement, B.S. and W., ect), and the total quantity disposed of for that month.

(11) That at such time as either ~~of~~ said Pit No. 4 or Pit No. 8 is filled to capacity, the ~~applicant~~ operator shall cover that pit with a layer one foot in thickness of Triassic Red Clay followed with a layer two feet in thickness of [redacted] random fill material, the perimeter of that pit shall then be re-surveyed and the data reported on the facility plot plan, to the Division's Santa Fe office, and to the Hobbs district office of the Division.

(12) That before the above-described covering procedures are initiated on either of said pits, the operator shall notify the Division Director so that a representive from the Division ~~office~~ may be present to witness any or all of the [redacted] procedures.

(13) That the Director of the Division may by administrative order rescind the authorization for use of said Pit No. 4 or Pit No. 8 approved under the provisions of this Order whenever it reasonably appears to the Director that such rescission would serve to protect [redacted] under supplies from contamination.

(14) [redacted] That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY,
Director

S E A L